Do Family Businesses Perform Better?

– the Hong Kong Perspective

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Abstract

This thesis investigates if family businesses meeting two criteria can have better performance than non-family businesses. The two criteria are the presence of family relationship among board directors and the existence of concentrated ownership among family members. The former may have a positive effect on corporate performance due to "altruism" among family members, or a negative effect in case of jealousy. Then, the existence of substantial family shareholders, may affect corporate performance positively due to the convergence of large shareholders' interests, or negatively as large shareholders expropriate corporate resources easily. Therefore, whether family business performs better than the average firm on balance is very much an empirical question.

According to a previous study, Hong Kong companies on average have more concentrated ownership comparing with the firms in other countries and most of the concentrated ownership is in the hands of families. Therefore, in order to find out if family businesses perform better or not, a cross-section of 62 listed Hong Kong companies in 1996 were used in an empirical research. A family business index was used in the research to distinguish family businesses meeting the two criteria from the other firms. The results of a simple data analysis show that family businesses do have better performance on average. However, regression results indicate that the positive effect of family businesses on corporate performance is statistically

insignificant.

Besides, the effects of the two criteria on corporate performance were studied separately. The results cannot show the presence of family relationship among directors having effect on corporate performance. On the contrary, it is more plausible that the existence of concentrated ownership can have positive effect on corporate performance, which is consistent with the existing literature.

摘要

此篇論文嘗試找出，合乎兩個判斷準則的家族公司，能否有較好的公司表現。這兩個準則分別是：公司內某些董事要有親屬關係，另外公司的擁有權是較集中在他們身上的。就頭一個準則來說，親屬間存在的"利他主義"，或許會對公司表現帶來正面影響；但親屬間的妒忌心態，也可能會對公司表現造成負面影響。至於第二個準則，它代表著公司擁有權集中於一些大股東手上，他們利益之集中，或許會正面地影響公司表現；可是大股東亦較容易私自動用公司資源，此舉也可能會造成反面影響。

根據前學者研究顯示，香港公司的擁有權比其他地方公司的較集中，而且它們多集中於一些家族身上。故此，爲要找出這些合乎兩個判斷準則的家族公司，是否有較佳的公司表現，六十二間香港上市公司於一九九六年的資料會被取用，作爲論文中實証研究的對象。在研究中，家族公司指標會被採用，來劃分合乎兩個準則的家族公司以及非家族公司。簡單的數據分析結果顯示，家族公司平均來說能有較好的表現；可是，迴歸法的結果顯示，合乎兩個準則的家族公司對公司表現造成的正面影響，在統計學上來說是毫不顯著的。

另外，此篇論文亦分別研究了那兩個準則對公司表現的影響。結果並未能顯示，董事間有親屬關係能影響公司表現；反之，公司擁有權較集中卻可爲公司帶來正面影響，這結果亦乎合現存的學術研究所得的結論。

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Table of Contents

List of Tables

Chapter 1 Introduction

"Family business" is not a new research topic. Many scholars have put much effort to analyze and investigate family business. They have given out many notions and opinions of family businesses in their books and journals. Scholars do this because they also think that family business is special. It is different from just a company and yet not fully affected by the norms in a family. If family business is so special, is the performance significantly different from a non-family business? Apparently, few papers attempt to provide an answer for this question. Therefore, this thesis tries to carry out an empirical research to compare the performance of family businesses and non-family businesses.

In the empirical study of this thesis, Hong Kong listed companies are chosen as the studying targets. Selecting Hong Kong to be the case study is because people generally believe that a certain number of firms in Hong Kong are held and controlled by families. In fact, it is not merely a common belief. According to Porta et al (1999), Hong Kong, besides Mexico, has the larger number of family businesses among 27 rich economies. Do these family businesses have better performance? Can families run companies better? In order to answer this question, Hong Kong companies are studied in the present research.

Before finding out whether family businesses perform better or not, it is necessary to define clearly what a family business is. Almost all scholars who study family business agree that it is very difficult to have a consensus on the definition of a family-owned firm. It is because there are various definitional elements for a family business. According to Neubauer and Lank (1998), these elements include the

percentage of shares owned by a family, the number of family members involved in management or/and monitoring, the participation of descendents of founder and the number of generations of owning family involved in the business, etc. Different scholars may employ different elements to define a family business. In this thesis, the key definitional elements are the participation of members in management and the ownership of a firm by a family. More precisely, a family business is defined as a firm in which majority ownership lies within a single family where two or more family members are directly involved in the business through having seats on the board of the firm.

Based on the definition, firms should meet two criteria to be family businesses. Firstly, some of the directors in a family business must bear a family relationship. Secondly, a family business exhibits concentrated family ownership. Accordingly, questions asked are "do family businesses meeting these two criteria have different performance from non-family businesses?" and "if yes, their performance is better or worse? "

The first criterion of family business can possibly affect the corporate performance. Some papers, such as Becker (1981), state that altruism exists in a family. That means family members are usually willing to consider the other members' benefit when they make a decision of their own. This can imply that when a director in a family business makes decision about how much effort he should put in monitoring the company, he may also consider the benefits of the other directors who are related to him. Such consideration will end up with much more effort put by each related director who is responsible for monitoring the company. Hence, a family business may have a better performance since there are more hard-working directors.

However, the positive effect of family relationship among directors dose not necessarily exist in family businesses. It is because jealousy is also common among family members. They may contend against each other and do something harmful to the related directors. How does family relationship affect corporate performance in an actual situation? It is an empirical question.

Simultaneously, the second criterion may also affect the performance of family businesses. Actually, the effects of ownership concentration on corporate performance have been studied for a certain period of time. According to the previous studies, concentrated ownership can produce two opposite effects on the amount of effort put by owners who are responsible for controlling a company. One of them is that the concentrated ownership may make the owners' wealth more dependent on the corporate performance and value, so it can induce owners to put more effort in monitoring a firm. Hence, a firm with concentrated ownership should have better performance. On the other hand, concentrated ownership gives too much power to a small group of owners, so they can have an opportunity to do something beneficial to themselves but harmful to the corporate performance, such as expropriation; because conflicts may occur between the interests of the family and those of the firm as a whole. They have no fear of losing the company if they can control a substantial proportion of the shares of their companies. Then, what is the effect of concentrated ownership is? This is also an empirical question.

In brief, this thesis tries to find out if family businesses can perform better than non-family businesses. A simple data analysis and simple regression models are employed using a cross-sectional data set containing a group of listed Hong Kong companies. The results of the simple data analysis suggest that family businesses

meeting the two criteria may have better performance on average. However, the regression results show that the existence of the better performance is not statistically significant.

In Chapter two, a literature review of family business, altruism among family members and ownership concentration is given. In Chapter three, the hypothesis about the effects of the two criteria of family businesses -- family relationship and concentrated ownership -- on corporate performance is explained. In Chapter four, the methodology of the research, a simple data analysis and simple regression models are introduced. Chapter five introduces the sources of data and explains what firms are included in the study. The empirical results are presented in Chapter six. Chapter seven contains conclusion.

Chapter 2 Literature Review

Before presenting the results of this thesis, it is better to have a review of the previous literature. The literature review here covers three areas. They are family business, altruism in families and ownership concentration.

Family business is a big topic. It involves many elements scholars would like to pay attention to in their studies. For example, evolution of family business, succession between two generations, culture inside family businesses, advantages and disadvantages possessed by a family business. Many of these studies involve sociological and psychological ideas. Although the aspects analyzed and the approach of investigation used in their studies are different from those in this thesis, a brief literature review about these studies cannot be omitted. It is useful to get a general idea about other scholars' notions of family business before developing own approach of study.

The aspect chosen in the present study is the performance of family businesses that is supposed to be affected by two criteria met by family businesses. These two criteria are the presence of family relationship among directors and the existence of concentrated ownership. Accordingly, after the literature review of family business, the literature review on altruism among members with family relationship and on ownership concentration are given out too.

2.1 Literature on Family Business

Many studies about family business are based on case studies, interviews with members in family businesses or questionnaires. After collecting first-hand information, scholars summarize and interpret it with their own words and ideas. At the same time, some other scholars base on the second-hand information to build up their own notions about family-owned firms. No matter using first-hand or second-hand information, scholars emphasize different aspects and elements of family business in their researches. In fact, no well-developed literature and few, or even no, well-built theories about family business can be seen, but only scattered ideas from different scholars' works can be found. Some of the ideas are shown below.

Institutional overlapping in family business

Lansbery (1983) points out that family business actually contains two social institutions. One is family; one is business. Each institution defines social relations in terms of a unique set of values, norms, and principles. Also, each has its own distinct rules of conduct. For family, its social function is to assure the care and nurturance of its members, so social relations are structured to satisfy family members' various developmental needs. For business, its function is to generate goods and services through organized task behavior, so social relations in firms are guided by principles that facilitate the productive process.

Lansberg (1983) also states that in early stage, family firms often benefit from the overlap between family and business principles. It is because during these early days

the family often provides the firm with a steady supply of trustworthy manpower. However, as the business matures, more complex organizational forms emerge, institutional overlap between family and firm begins to generate conflicts in the organization. Lansberg (1983) claims that the founder of a family firm experiences these institutional contradictions most strongly and these contradictions frequently interfere with the effective management of human resources in family firms.

Appropriate role of family within business

The question followed is how people choose if they face the contradictions between the norms that operates in family and those in firm. Birley et al (1999) involves a research which explores the attitudes of owner-managers to the conflicting pressures of family and business. In order to do so, a questionnaire was mailed to a random sample of owner-managers in the United Kingdom. According to Birley et al (1999), the respondents are divided into three groups. The first group involves one third of the owner-managers. This paper does not have any particular strong views but is concerned to arrive at an appropriate balance between family and business issues. For example, it believes that a family business is not automatically defined by the acquisition of a family and business affairs should be kept separate from family affairs. The second group includes one third of the respondents. This paper expects that family should play an important role in running a family firm as it believes that the business is stronger with family members involved. For example, it considers that children from a family business have a responsibility for the business and shares should only be transferred to members of the family. The other one third of owner-managers in the last group oppose the views of the second group. Birley et al (1999) believes that family should not influence the business. For example, it thinks

children should not necessarily receive shares in the business in equal parts and family members are not entitled to differential pay arrangements. In sum, owner-managers of family business have various attitudes towards the role of family in the business. There is no certain attitude prevalent among the owner-managers of family business.

Weaknesses and strengths of family business

With the special situation, family business has its own strengths and weaknesses. Many papers try to find them out. Donnelley (1964) is one of them. This paper identifies some of the advantages and disadvantages of family-owned firms. Its work is based on the observations of 15 successful family companies, supported by personal interviews with family managers and other interested businessmen and educators. The paper points out six strengths of family business. They are i) the availability of otherwise unobtainable financial and management resources because of family sacrifices, ii) the important community and business relationships stemming from a respected family name, iii) a dedicated and loyal internal organization, iv) an interested and unified management-stock-holder group, v) a sensitivity to social responsibility and vi) the continuity and integrity in management policies and corporate focus. At the same time, the paper also mentions four weaknesses of family-owned firms. They are i) conflicts occurring between the interests of the family and those of the enterprise as a whole, ii) a lack of discipline being exerted over profits and performance in all parts of the organization, iii) a failure to rise quickly to meet new marketing challenges and iv) situations where nepotism rules unchecked by objective standards of meritorious managerial performance.

Donnelley (1964), in the conclusion, points out that a popular belief suggesting when family and business are interrelated a less efficient business enterprise generally results is unfounded. It thinks people have this belief ignore the fact that effective administrative practice is founded on an understanding of all human relationships.

Governance in family firms

After perceiving the special situations and weaknesses of family businesses, scholars and businessmen want to look for some ways to improve the performance of family businesses. Some books giving out the methods to have better governance have been published. Usually, writers suggest setting up a board in a family business, where outside directors must be involved to be consultants. It is because someone not related to the family can give objective opinions to the family business. Also, they can help to moderate the conflicts between family interests and corporate interests when family members have to make decision for the firm. In addition, scholars advise family members to have family meetings frequently besides board meetings since some problems can be solved more easily in a causal environment.

2.2 Literature on Altruism in Families

Among the strengths of family business, personal sacrifice probably is the most well known one. Its existence is usually explained by an idea called altruism. Papers studying family commonly states that altruists do exist in families. Becker (1976) is one of them.

Economic model for explaining altruism

Becker (1976) remarks that the idea "survival of the fittest" suggested by biologists can explain why human beings are egoists and only concern self-interests. However, sociologists find that there are really altruistic people in the world. Then a question produced is how the altruists survive. Finally, sociologists build models with "group selection" to explain this paradox. Thereafter, Becker (1976), from an economist's view, develops an economic model to explain the existence of altruism.

In its model, there is only one altruist and all the other people are egoists. Note that the utility of the altruist depends on others' utilities besides his own one. Also, the altruist is willing to reduce his own consumption in order to increase the consumption of others, so there is a transfer from his resource to others in his budget line. However, one thing Becker (1976) does not mention. That is the reason why there is an altruist at the beginning. After enunciating the model, Becker (1976) shows two important things. Firstly, even though an altruist gives away part of his income and refrains from some actions that raise his own income, his own consumption might not be less than that of an egoist because the beneficiaries of his altruism would consider the effect of their behavior on his consumption. That means the egoists' increasing utilities can benefit the altruist too as his utility depends on others'. Secondly, each of the egoists receiving transfer from the altruist has an incentive to consider the altruist's utility in his decision making for consumption. Then everyone in the group seems to be an altruist even he is not in nature. Becker (1976) calls this the "rotten-kid" theorem.

The theorem is more clearly explained in a book called "A treatise on the family" written by Becker in 1981. Becker (1981) states that sufficient caring by an altruist induces even selfish beneficiaries to act as if they care about their benefactor as much as they care about themselves. In addition, Becker (1981) states that the caring of the altruist and his selfish beneficiaries implies that they are willing to internalize all externalities affecting each other, so efficiency can be increased.

Meanwhile, Becker (1981) claims that altruism is more common within a family. It explains that it is not only because altruism is more efficient in small organizations, such as a family, but also because family members have many interactions. Both of these reasons make altruism more common in a family.

However, Becker (1981) admits that families with altruistic members are not perfectly harmonious. It is because envy and jealousy do exist among family members. Usually, children want larger contributions from their parents and wives want larger contributions from their husbands. These envious children and wives also want smaller contributions to their siblings or co-wives. Without doubt, envy produces conflict between enviers and victims. In the model of Becker (1981), the consumption of the victims can be considered as negative inputs into the production of a commodity. An envier is willing to reduce his own consumption if this action can reduce the consumption of his victims sufficiently. That means he will take all actions that can raise the difference between their own incomes and the incomes of victims. Finally, Becker (1981) claims that families with both altruistic and envious members have neither perfect harmony nor pervasive conflict.

In fact, part of the hypothesis in this thesis is similar to the idea of Becker (1981).

That is altruism in families may increase the efficiency through the action of internalization of the externalities; on the contrary, envy may also exist among family members to damage the harmony among them. The hypothesis is explained in more detail in Chapter three.

2.3 Literature on Separation of Corporate Ownership from Control

Besides the presence of family relationship among directors, concentrated ownership is another criterion to be met by family businesses. This criterion may affect corporate performance too. Before showing how concentrated ownership affects corporate performance, it is better to know something about ownership concentration. Without doubt, studies of ownership concentration are generated from the idea of separating corporate ownership from control.

First study of separating corporate ownership from control

Berle and Means (1932) is the founder of the concept of separation of corporate ownership from control. This book claims, " Dispersion in the ownership of separate enterprise appears to be inherent in the corporate system. It has already proceeded far, it is rapidly increasing, and appears to be an inevitable development." Such dispersion in ownership then inevitably brings about a problem that is the separation of ownership from control in a firm. Berle and Means (1932) states, "The separation of ownership from control produces a condition where the interests of owner and of ultimate manager may, and often do, diverge, and where many of the checks which formerly operated to limit the use of power disappear." Thereafter the phenomenon and the problem the book points out lead many further studies about the separation of

corporate ownership from control. Among these studies, some are theoretical researches about the governance problems with the ownership structure after the separation; some are empirical researches about the effects of the ownership structure on some financial variables after the separation.

Theoretical research--agency costs

Jensen and Meckling (1976) mentions theory of the firm and tries to use agency costs to explain the problem of ownership structure after separating corporate ownership from control. It claims that if a firm is not fully owned by a manager-owner, agency costs will emerge. In other words, if a firm has many owners and is only managed by a small group of managers, agency costs will be generated by the divergence between the managers' interests and the small outside owners' interests. It is because the managers bear only a fraction of the cost of any benefits they take out from the firm to maximize their own utilities, they have incentive to consume the resources of the firm instead of maximizing the firm's value. To control their activities, owners have to bear high agency costs.

Jensen and Meckling (1976) also points out that the small outside owners may be shareholders or bondholders. The agency costs are different between the firms where outside owners are shareholders and the firms where outside owners are bondholders. That means the agency costs of firms financed by issuing equity are different from by using debt. After that, Jensen and Meckling (1976) sets up a model to calculate the optimal ratio of equity and debt to minimize the agency costs in a firm.

What this paper contributes is giving a clearer and more precise explanation for the

problem of the ownership structure after separating corporate ownership from control in terms of a firm's costs.

Theoretical research--viability of ownership structure after the separation

Fama (1980), on the contrary, pays attention to the viability of the separation of security ownership and control in corporation. It states that such separation is an efficient form of economic organization. That means even the two functions of an entrepreneur -- management and risk bearing are performed separately by different agents, the problem of corporate governance caused is not serious. It is because both of the managers and risk bearer are disciplined by competition from other firms, which forces the evolution of devices for efficiently monitoring the performance of the entire team and of its individual members in a firm. In more precise language, the risk bearers, as residual claimants, suffer the most direct consequences from the failings of the team. And the managers, like coaches of any team, may not suffer any immediate gain or loss in current wages from the current performance of their team, but the success and failure of the team impacts their future wages. Hence, they also have incentive to do their jobs well in their firm.

The main concept Fama (1980) introduces is that large corporation with the ownership structure characterized by the separation of security ownership and control is a viable form of economic organization. However, it is difficult to test his concept of the market competition power that can ensure the good behaviors of managers and owners in firms.

Theoretical research--explanation for survival of ownership structure after the separation

Besides calling attention to the viability of the separation of ownership and control, Fama also cooperates with Jensen to publish a paper. Fama and Jensen (1983) contends that separation of decision function from controlling a firm and risk bearing function from owning a firm survives in organizations because of two reasons. One of them is that such organizations get benefits of specialization of management and risk bearing. The other reason is that there is a separation of decision management from decision control in the organizations. The later reason actually bases on the main hypothesis in the paper. Fama and Jensen (1983) states that if an individual agent dose not exercise exclusive management (initiation and implementation) and control (ratification and monitoring) rights over the same decisions, his power of expropriating the interests of residual claimants can be limited. That means the agency problem is not so serious as people commonly believe. Therefore, the ownership structure due to the separation of ownership and control can still survive in large organization.

Even the agency problem between managers and owners can be really solved by the solution mentioned by Fama and Jensen (1983), there is still a problem existing among owners having controlling right over the decisions. The problem is a tendency to free ride on others' effort among controlling owners.

Theoretical research--solution for free-rider problem in controlling the management of firms with ownership structure after the separation

Shleifer and Vishny (1986) concentrates on the problem of lack of owners' incentive to control the management in firms. That is this paper focuses on the agency problem among owners with controlling right rather than between managers and owners. Shleifer and Vishny (1986) claims that there is a free-rider problem in controlling management among owners, especially among the small owners since they do not have a big enough stake in the firm to absorb the costs of watching the management. Without a proper control, the managers can do what they like and ignore the shareholders' interests as well as the performance of a firm. To solve this problem, Shleifer and Vishny (1986) suggests that a firm should have a large shareholder. It is because the large shareholder can capture higher return from controlling the management to cover his cost, then he has more incentive to control. Meanwhile, Shleifer and Vishny (1986) treats the initiation of takeover of a firm as a controlling method used by shareholders. Subsequently, it develops a model showing that when the proportion of the firm's shares held by the large shareholder rises, a takeover becomes more likely and the price of a firm's shares increases.

The hypothesis in Shleifer and Vishny (1986) brings about an idea that is a certain ownership concentration guaranteeing a better monitoring over the management in a corporation where there are many shareholders, thus the corporation with this concentrated ownership can have better performance. Its idea then arouses scholars' attention to the topic of ownership concentration.

Thereafter, the attention to the ownership concentration has triggered many empirical studies to find out the effects of ownership concentration on shareholders' participation, performance and decisions of corporations that have many shareholders and experience the separation of ownership and control. For example,

scholars try to find out the relationship between ownership concentration and profit rates or Tobin's Q of companies, they also try to figure out how the ownership concentration affects shareholders' participation in voting and the probability of facing takeover. The literature review of these studies is presented in the following.

Empirical research--relationship between ownership concentration and shareholders' participation

Brickley et al (1987) involves an empirical research to investigate the relationship between the ownership concentration and votes on management-initiated antitakeover amendments. Its study bases on the theory suggests that shareholders who own blocks of stock have a stronger incentive to invest in voting on corporate issues than nonblockholders. Its theory actually is similar to that of Shleifer and Vishny (1986). To test this theory, Brickley et al (1987) examines 201 firms that voted on a set of management-initiated charter amendments proposing antitakeover provisions in 1984. According to its regression results, institutional investors and outside blockholders vote more actively on these amendments than nonblockholders. Its finding supports the view that ownership concentration among institutional investors and other outside blockholders increases the incentives to invest to participate in the voting process. Furthermore, Brickley et al (1987) finds that the positive relation between the level of institutional stock ownership and the percentage of no-votes cast is stronger when the proposals are met with negative stock returns. That means if the shareholder holds more shares of a firm, his opposition to the proposal is greater when the proposal reduces shareholders' wealth.

What this paper does can provide indirect evidence on the relation between

ownership concentration and the incentives to monitor managers. Its findings support the idea of Shleifer and Vishny (1986). That is, large shareholders are more willing to monitor managers in a firm.

Empirical research--relationship between ownership concentration and likelihood of hostile takeover

Shivdasani (1991) tries to examine the relationship between the ownership concentration and the likelihood of hostile takeovers. It employs the disciplinary view of corporate takeover in the study. That means takeover targets represent cases where the internal governance mechanisms have been ineffective. Hence, if a firm's internal monitoring is enough, the probability of being hostile takeover target is lower. From the data analysis, Shivdasani (1991) finds that hostile targets have smaller board ownership, in contrast, the nontargets have greater board ownership. It supports the idea of Shleifer and Vishny (1986) that owners with more shares have higher incentives to monitor the management, that is the internal governance mechanism (board of directors) functions well with smaller free-rider problem among owners in control.

At the same time, Shivdasani (1991) finds that ownership by blockholders unaffiliated with management raises the likelihood of a hostile takeover attempt. In other words, these blockholders tend to support or even initiate a hostile takeover in their firm if they think the internal governance mechanism fails. However, the ownership by blockholders affiliated with management decreases the likelihood of a hostile takeover attempt. They try to deter hostile takeover even the internal mechanism fails. These results suggest that the board of directors and hostile

takeovers are substitute mechanisms and that unaffiliated blockholdings and hostile takeovers are complementary mechanisms for corporate control.

Once again, the idea of better monitoring with higher ownership concentration is proved. Later on, scholars try to prove this idea by using other issues in corporations, such as the leverage ratio of corporations.

Empirical research--relationship between ownership concentration and leverage ratio

Financed by debt through issuing bonds is commonly regarded as a way to discipline managers in a firm. It is in part because creditors have control right when the firm defaults, and in part because they typically lend short term, so borrower (firm) has to come back at regular, short intervals for more funds. It urges managers to work better as the performance of a firm influence creditors' decision for further lending to the firm. Since issuing bonds and having more creditors can discipline managers too, high leverage level and large shareholders can be viewed as substitutes in monitoring management. If leverage ratio is found negatively related with the existence of large shareholders in a firm, it can directly give evidence to the idea that large shareholders monitor management well, so it is no need to use high leverage ratio to discipline managers. Accordingly, scholars try to do some empirical researches on the relationship between ownership concentration and leverage level.

Wiwattanakantang (1999) finds out the negative relationship between ownership concentration and debt ratio in a firm. It sets up a regression model by using "market leverage ratio" as the dependent variable and finds that the coefficients of the three

independent variables "individual-largest", "corporate-largest" and "five largest" are also negative. That means if a firm's ownership is concentrated to an individual shareholder or to a corporate shareholder or to the top five investors, the leverage level is also lower than the one in a firm without concentrated ownership. It explains the result by the idea that concentrated ownership structure induces a higher level of monitoring, so debt financing used to mitigate the moral hazard problem and discipline managers is less widely adopted, thus the leverage ratio is lower with the existence of concentrated shareholdings.

However, Zeckhauser and Pound (1989) finds no significant difference between the leverage ratio of the firms with large shareholders and the one of the firms without large shareholders. This paper points out another idea about debt financing besides the concept mentioned above. That is debt financing can monitor managers, at the same time it creates other agency costs and bankruptcy costs. If there are large shareholders whose monitoring effort can ensure the management dose not shift a firm's investment policy from those projects preferred by creditors, then the costs of debt can be reduced, thus debt may be more widely used. Hence, leverage ratio may be higher with the existence of large shareholders. That means the monitoring from large shareholders may increase or decrease the use of debt in a firm. Therefore, Zeckhauser and Pound (1989) states that the positive and the negative relationship between the existence of large shareholders and the leverage ratio will cancel off each other, so no relationship between the two things can be found.

All empirical researches mentioned above can directly or indirectly give evidence to the idea of Shleifer and Vishny (1986). These researches also support that concentrated ownership can guarantee the existence of better monitoring

management in firms. With the more careful monitoring, the corporate performance should be better. To find out if it is true in the real world, many scholars try to do empirical researches on the relationship between ownership concentration and corporate performance. During these several decades, many studies are about the relationship between concentrated shareholdings and the performance of a firm. Some of them are summarized as the follow.

No relationship between ownership concentration and performance

Among the empirical research, Demsetz and Lehn (1985) proves that ownership concentration is not related with the performance of firms. This paper uses a linear regression to show that there is no significant relationship between ownership concentration and the accounting profit rates of firms, especially no significant positive relationship.

Piecewise relationship between ownership concentration and performance

However, Morck et al (1988) does not agree with Demsetz and Lehn (1985). Morck et al (1988) think that using a simple linear relationship to describe the relation between ownership concentration and firms' performance is not enough. It is because it states that a nonmonotonicity exists in the relationship between ownership concentration and the profitability of a firm. Therefore, Morck et al (1988) suggests a piecewise linear regression to estimate how ownership concentration affects corporate performance. Its regression result shows that the performance indicator Tobin's Q firstly increases, then declines, and finally rises slightly as ownership concentration rises.

Morck et al (1988) declares that this regression result can be explained by the presence of two effects and each of them dominates in different range of ownership concentration. It proposes two hypotheses to account for these two effects. It calls the first hypothesis "convergence-of-interests hypothesis" which predicts that a firm's market value increases with rising ownership concentration. In this paper, the concentration index of each firm is calculated by using board ownership and board is regarded as the management of a firm. Then, when a concentration index is higher, that is the management has more shares of a firm, managers themselves have more incentive to manage the firm and increase the firm's value. Morck et al (1988) believes that this hypothesis dominates in the first and the last range of a firm's ownership concentration. Therefore, the Tobin's Q rises with increasing ownership concentration in these two ranges. On the other hand, Morck et al (1988) claims that the second hypothesis "entrenchment hypothesis" dominates in the middle range of corporate ownership concentration. This hypothesis suggests that market valuation of a firm can be adversely affected for a certain range of high ownership stakes. It is because a manager who controls a substantial fraction of a firm's equity can have enough voting power and influence more to guarantee his or her benefits in a firm. That means that a large shareholder may probably divert a firm's resources to benefit him or her rather than to maximize a firm's value.

The main contribution of Morck et al (1988) is that it develops a "piecewise idea" in studying the relationship between ownership concentration and performance of corporations. It points out that it is not true that increasing concentrated shareholding can always improve the performance of a firm. Actually, the relationship between concentrated ownership and corporate performance can be positive or negative,

depending on the degree of initial ownership concentration a firm has.

Among the studies of this empirical issue, most of their samples comprise only US companies. Hence, this thesis tries to use a sample of corporations in Hong Kong - an Asian economy - as its studying subject. Looking at Hong Kong corporations, it is not difficult to find that a good number of them are held and controlled by families. In fact, this has been pointed out in a recent paper written by Porta et al in 1999. Their paper investigates the corporate ownership of publicly traded firms in 27 countries. It shows that controlling shareholders are indeed present in many large companies and these large shareholders may be states, widely held financial companies, widely held nonfinancial companies, or families. One of its findings is that Hong Kong companies, on average, have more concentrated ownership comparing with the firms in the other 26 countries. Its another finding is that in Hong Kong the concentrated ownership is usually in the hand of a family rather than a financial institution or the state. Therefore, Hong Kong is used as a case study to see the relationship between the concentrated ownership in hands of families and the corporate performance.

Chapter 3 Hypothesis

Many factors may affect the performance of family businesses. This thesis tries to study two of them. The first one is the presence of family relationship among directors. The second one is the existence of concentrated ownership held by family members. These two criteria met by family businesses are supposed to have effects on the corporate performance. However, do they really affect the performance of family businesses significantly? If yes, how are their effects? Hence, the main concern of this thesis is finding out the answers for these questions by doing an empirical research with Hong Kong data.

Before finding out the answers of the questions, it is better to state again the definition of family businesses more clearly.

3.1 Definition of Family Business

As mentioned above, there is no common definition for family business among scholars. Hence, a simple and easily understood one is set up in the thesis. A family business is defined as a firm in which majority ownership lies within a single family where two or more family members are directly involved in the business by having seats in board in a firm. Who are the family members? In this thesis, family members include all relatives of a director in a firm, such as his or her parents, wife or husband, sibling, uncles and aunts, nephews and cousins and all his or her relatives by marriage. Then what is the minimal amount of shareholding can be regarded as a majority ownership? Actually, there is no common determination of it. In the thesis,

three minimal amounts of shareholding regarded as majority ownership are used. They are 10 percent, 20 percent and 35 percent of shareholding. That means when ten (20 or 35) percent of shareholding is used as the minimal amount, a single family who holds 10 (20 or 35) percent or more of a firm's shares is claimed as having a majority ownership of the firm.

The cutoff of 35 percent is used because it is a critical percentage of holding a firm in Hong Kong. In the document called "Rules Governing the Listing of Securities on the SEHK", a controlling shareholder is defined as any person, or a group of persons, who is entitled to exercise or control the exercise of 35 percent or more of the voting power at general meetings of the issuer. Moreover, 35 percent of shareholding is an amount specified in the Takeover Code, which is set up by Securities and Futures Commission, as being the level for triggering a mandatory general offer. In sum, it is a common belief that a person or a group of persons holding 35 percent of shares has controlling power towards the company. Therefore, if a family owns 35 percent or more of a firm's shares, this firm can be viewed as being owned and controlled by the family.

Besides 35 percent, this thesis tries to use 10 percent and 20 percent as the cutoff points too. It is because Porta et al (1999) studying corporate ownership around the world have tried to employ these two percentages of shareholding as the cutoff points. Porta et al (1999) state that most countries mandate disclosure of 10 percent ownership stakes. Thus, it seems that having 10 percent of shareholding starts to have controlling power in a firm. Besides, they think that having 20 percent of shareholding is usually enough to have an effective control of a firm. Therefore, the two cutoffs, 10 percent and 20 percent, are also used as the minimal amounts of

shareholding to define the majority ownership in the definition of family business.

After defining family businesses, it is time to see how the two criteria met by family businesses may affect corporate performance.

3.2 Existence of Family Relationship among Directors

Some scholars believe that altruism usually exists among family members. They also claim that altruism can make relatives to internalize the externalities among themselves, though efficiency can be improved. If this is true, family businesses may have better performance. The hypothesis behind this idea is that related directors have incentive to internalize part of the positive externality of their effort at controlling a firm among themselves. Their incentive of the internalization can be thought as a result of the existence of altruism in their family. With the internalized external benefit, the related directors are willing to put more effort to control a firm. In other words, every related director is willing to work harder in the firm, so the performance of the firm where some controlling shareholders are relatives should be better. In more precise language, if there are two firms where everything including their ownership concentration are the same except some directors of one of them are relatives, then the firm with relatives is supposed to perform better than the other one.

In order to explain the hypothesis and illustrate how the positive externality of effort is internalized in family businesses, the positive externality of effort should be explained first. The situations of an entrepreneurial firm and a listed non-family business are used to show what the positive externality of effort is and how it exists

in a firm. After that, an explanation and a simple model are used to show how the internalization works in family businesses.

Entrepreneurial firm having no positive externality

If a firm is wholly owned and completely managed by the same person, this firm will have no corporate governance problems and its manager-owner, or called entrepreneur, should be willing to do his best and put all his effort to maximize the firm's value. It is because when he owns all shares of the firm, he can capture all benefits of his effort made to manage the firm. No other people can benefit from his contribution. That means there is no positive externality of his effort diffusing to other people in the firm.

In order to maximize income earned from his firm, the manager-owner puts effort to manage and control the firm until his marginal benefit of effort is equal to his marginal cost of effort. This effort level chosen by the manager-owner is surely an optimal one for him as well as for the firm. It is because there is no positive externality of his effort at managing the firm, so there is no distortion in making the best decision of effort level for the entrepreneur and the firm.

Ignoring the positive externality in listed non-family businesses

Many companies in real world, however, are usually owned by more than one person. Particularly, in order to raise more capital to finance corporate investment and have liquid capital markets, companies may go public. All these publicly traded companies have many owners and tend to have diffuse ownership. According to the

notion of Berle and Means (1932), this diffuse ownership causes many corporate governance problems since it separates ownership of residual claims from control of corporate decision. In listed companies with diffuse ownership, many shareholders have small fractions of shares only. Under one share-one vote regulation, they are not influential enough to a firm's decision. However, the firm's decision directly determines the firm's performance on which their income depends directly. Some owners may own relatively larger portions of a firm, so they have more voting power and are able to determine the firm's decision. They are supposed to have seats in board and monitor the management of a firm.

Once there is more than one person owning a firm and supposed to control the firm, there is a free-rider problem. It is because when one of the owners puts effort to monitor the management and control a firm, all other owners can benefit even they have not put any effort. That is if one owner works hard in a firm to ensure a good corporate performance, the market valuation of the firm will be high. Hence, all shares of the firm become more valuable and every shareholder can benefit by holding these valuable shares. In other words, not only the owner who works hard can be the beneficiary, but other owners without putting effort can also get advantage. This advantage, actually, is known as the external benefit of owner's effort in a firm. That means an owner's effort can unintentionally produce a benefit to other owners when he, actually, just wants to increase his own income by putting effort to work in a firm. Rationally, every owner prefers being a free rider to a hard-working owner.

Note, however, that even all owners are not free riders and willing to put effort, the effort levels they contribute to a firm are not optimal to the company. It is because each owner's effort can produce the external benefit on other owners as well as on the

whole firm, but no one has incentive to consider such positive externality when they make decision about their own effort levels.

To maximize his own utility in a firm, each individual owner will just put effort to control the firm until his marginal benefit of effort equals his marginal cost of effort. Obviously, the marginal benefit is the amount of the incremental value of each share multiplying the number of shares he owns. And the marginal cost he has to pay is the leisure time he forgoes to make the additional effort. Hence, sticking to the rule of equalizing own marginal benefit and marginal cost of effort, each owner can find the optimal level of effort he should have. Note, however, that this level is only optimal to the owner himself, but not to the whole company since the positive externality of effort mentioned above is not taken into consideration by the owner. If all owners also consider the external benefit of their effort, it is believed that they must work harder and their effort level will be the optimal one to their firm. Then their firm's performance will be much better.

Nonetheless, it is not easy to impel owners to attain the optimal effort level for their firm as it is really difficult to induce them to internalize the positive externality of their effort. The hypothesis in this thesis proposes that such positive externality of effort may be internalized via family relationship among directors who monitor a firm. With such internalization of the external benefit of effort, it is expected that listed family businesses may perform better since some of their owners on board are willing to work harder.

Internalizing the positive externality in listed family businesses

Listed family business is one type of publicly traded corporation. They are similar but not exactly the same with other publicly traded firms. They are similar in the sense that they are also publicly traded and owned by many shareholders, thus they also face the issue of positive externality of their owners' effort. On the other hand, listed family businesses are different from publicly traded firms because some controlling owners on board of a listed family business are relatives. The family relationship of these related directors is supposed to have a function of inducing them to internalize the external benefit that is generated from their effort to the other related directors in the firm.

In order to find out a desirable amount of effort to control a firm, each of the related directors in a listed family business considers not only the benefit of his effort he can get, but also the benefit generated from his effort to the other related directors. Why dose a director also consider his relatives' benefit in a firm when he makes decision about his effort level to control a firm? Some people believe that the existence of altruism within a family is the reason. Altruism suggests that one's happiness depend on the happiness of someone else. In the same way, people may think that a director's utility in a firm depends on the corporate benefit of other directors related to him just because he is altruistic.

However, why dose the altruist only consider the benefit of the directors who have family relationship with him? To understand the reason, people should look into the special condition within a family. Just like what Becker (1981) says, within a family, members usually have many interactions and are very interdependent among

themselves during their whole lives. Each member's living and self-interests do highly depend on those of other members. For instance, in order to have somebody they can depend on in their old ages, parents are willing to raise their children and give them better livings. To rephrase it, parents' livings in the evening of their lives depend on the present livings of their children. Moreover, the help people can get from their sibling depend on the help their sibling can get from them. Finally, two consequences are brought about by such special condition in a family. The first one is family members discern that cooperation among themselves is very important. It is even much more important than a competition. Hence, they would like to cooperate in many circumstances. They do it not because of their kindness, but the actual benefit they can get from it. The second consequence of the special condition among family members is that they tend to consider their relatives' benefits in their decision making. It is because their relatives' benefits can in return affect their utilities. This idea is similar to Becker's "Rotten Kid Theorem"[i]. According to the idea of Becker (1981), no matter how selfish family members are, they are willing to internalize the effects of their actions since they can get benefit from it.

No matter the altruism is real or rooted in selfishness, there is a tendency for family members to consider their relatives' benefit and internalize the external effects influencing their relatives when they make decisions.

Consequently, in a family business, a director tends to consider the benefit of the related directors when he makes his effort decision. The most obvious example is that when a son thinks about how much effort he should put in order to maximize his utility in a firm, he also considers the effect of his effort on his father's corporate income. It is because a son usually can get a subsidy or a transfer from his father's

pocket. Moreover, after the death of his father, a son can get what his father possesses now, involving a firm and a firm's profit. Thus, a son simply treats his father's benefit as his own when he makes decision in a firm, including his decision of how much effort he should put in a firm. In other words, he is willing to internalize the external effect of his effort on his father's income from a firm.

So far, the reason of internalizing the external benefit of one's own action to his relatives is known. It is time to show how a director internalizes the positive externality of his effort and to prove these related directors do put more effort at controlling a company. In doing so, a simple model is used here. This model is similar but not exactly the same with the one of Becker (1976) which has set up an economic model for altruism. In the model of Becker (1976), the utility function of an altruist h is written as

$$u^h = u^h(X_h, X_i)$$

where X_h and X_i are the own consumption of h and other family member i respectively. That means an altruist's utility depends on other members' consumption. This is similar to the idea that the utility of a director also depends on the benefit of the other related directors in the firm. The model used in present study is shown as below.

It is supposed that there are many shareholders in a listed family business. Some of them hold larger fractions of shares, so they have more power and control the firm by having seats in board. Among these directors, some of them are relatives. For simplicity, it is assumed that there are only two related directors A and B in the

company and all the other directors are unrelated. Both A and B have their own shareholdings of the firm. Suppose α and β are the percentages of shares owned by A and B respectively. Also, each of them has a utility function that is written as

$$u = u(Y, L)$$

where L is leisure time and Y is income. It is assumed that A and B's income is only from the profit of a firm which they have shareholdings. In fact, firm's profit depends on many variables, such as price of output, cost of input and other unexpected variables in the market. However, the main focus in this thesis is each director's effort level that affects firm's profit. So the profit function of a firm is set to be

$$\pi = \pi(e, c)$$

where e is vector of effort level in term of time used of all directors and $\frac{\partial \pi}{\partial e}$ is positive, and where c is all other variables determining firm's profit. With a firm's profit function, A's income can be written as

$$Y_A = \alpha \cdot \pi(e_A, e_B, e')$$

where α is a constant which is the percentage of shares held by owner A. It indicates the size of his ownership of the firm and determines the portion of the firm's income A can get. For e_A and e_B, they are the amounts of effort director A and director B make to control the firm respectively. And e' is the effort of other directors in the firm. Likewise, B's income is

$$Y_B = \beta \cdot \pi \ (e_B, e_A, e')$$

where β is a constant which is the percentage of shares held by director B, and e_B is the amount of effort director B makes to control the firm.

Now with the assumptions and the setting mentioned above, director A tries to find out his optimal effort level which maximizes his utility. His maximizing problem is set as follow

$$\begin{aligned} \underset{e_A}{\text{Max}} \quad & U_A = U_A \ (Y'_A, L_A) \\ \text{s.t.} \quad & Y'_A = Y_A + \theta Y_B \\ & L_A = k - e_A \end{aligned}$$

where k is the total time director A has and it can be spent on two activities including controlling the firm and having leisure, and where Y_A is director A's income which equals $\alpha \cdot \pi \ (e_A, e_B, e')$ and Y_B is director B's income which equals $\beta \cdot \pi \ (e_B, e_A, e')$. Note that director A's utility depends on Y'_A which is more than Y_A. It is because the income which director A cares about comprises two parts. One is Y_A which is director A's direct income from the firm where he has α of the ownership. The other part of income director A cares about is Y_B though it is not A's direct income. Director A also considers B's income because B is his relative. The reason why A does this has been explained before. The most simple reason is that there is a transfer or a subsidy from B's pocket to A's. How much is the transfer is indicated by θ. Sometimes, director A's benefit from B's income may not be so concrete, but the size of this benefit still can be represented by θ. Thus, θ is the portion of B's income which will be transferred to A or which will affect A's utility through other means.

It should be noted that the presence of altruism, no matter the true or the fake one, in this model is represented by θ. This is a little bit different from the model used by Becker (1976) where the altruism exists as altruist's utility function directly involves others' consumption.

As director A and B are relatives, they always have interaction and get benefit from or give benefit to each other, so θ here should be greater than 0 and in the most extreme case, θ can be equal to 1. However, if jealousy does exist among related directors, θ may be considered as negative by them. The detailed explanation is given later. Thus, θ can be positive or negative, which depends on how related directors perceive the condition of their relationship.

When director A makes decision about his optimal effort level, he considers also director B's income in the proportion of θ. This part can be treated as A's indirect income. In order to find out his optimal effort level, director A solves the maximizing problem. Here, the maximizing problem can be rewritten as

$$\underset{e_A}{\text{Max}} \quad U_A = U_A[\alpha \cdot \pi(e_A, e_B, e') + \theta \cdot \beta \cdot \pi(e_B, e_A, e'), k - e_A]$$

After simplifying, it would be

$$\underset{e_A}{\text{Max}} \quad U_A = U_A[(\alpha + \theta \cdot \beta) \cdot \pi(e_A, e_B, e'), k - e_A]$$

To find the utility-maximizing effort level, the first order condition has to be satisfied. That means the first derivative with respect to e_A should be set to zero. That is

$$\frac{dU_A}{de_A} = (\alpha + \theta \cdot \beta) \frac{dU_A}{d\pi} \frac{d\pi}{de_A} - \frac{dU_A}{de_A} = 0$$

Thus, a necessary condition for director A to maximize his utility is

$$(\alpha + \theta \cdot \beta) \frac{dU_A}{d\pi} \frac{d\pi}{de_A} = \frac{dU_A}{de_A}$$

where $(\alpha + \theta \cdot \beta) \frac{dU_A}{d\pi} \frac{d\pi}{de_A}$ is the marginal benefit of his optimal effort level e_A^* at controlling a firm and $\frac{dU_A}{de_A}$ is the marginal cost of his optimal effort level e_A^* at controlling a firm. They must be the same when director A wants to maximize his utility.

It should be noted that the marginal benefit of e_A^* depends on several constants, they are α, θ and β. If any one of them increases, the marginal benefit of director A's effort will be higher, then optimal effort level of director A must increase. If θ in this case is the portion of income or advantage a director can get from the related directors in a firm, it should be positive. This usually occurs in family businesses. Nevertheless, in other publicly held firms where all controlling directors are not related, θ is zero. Then the marginal benefit of every director's effort in such firm is

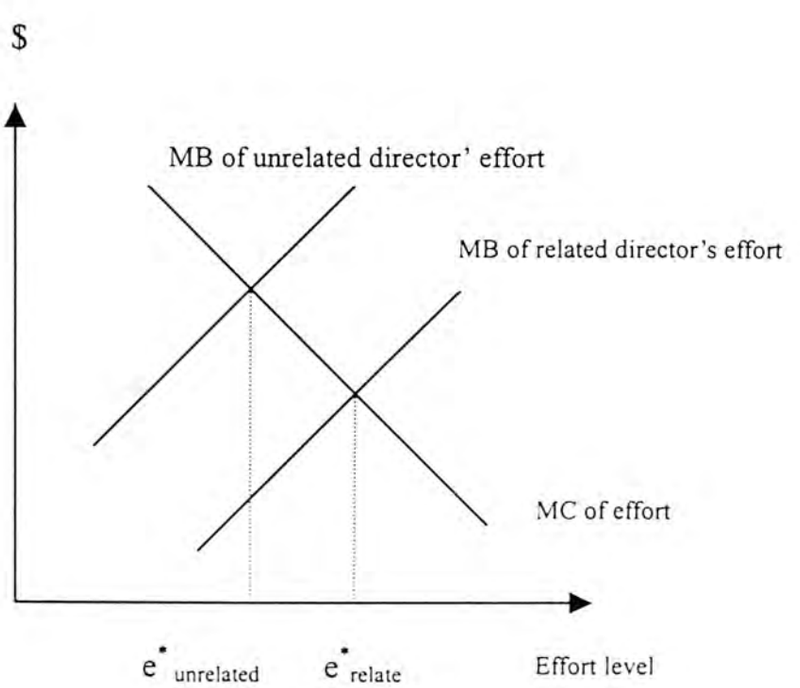
$$\alpha \frac{dU}{d\pi} \frac{d\pi}{de}$$

yet, the marginal benefit of a related director's effort in a family business is

$$(\alpha + \theta \cdot \beta) \frac{dU}{d\pi} \frac{d\pi}{de}$$

If the marginal utility of effort $\frac{dU}{d\pi} \frac{d\pi}{de}$ and the ownership percentage α are the same for a related director and an unrelated director, then it is obvious that the marginal benefit of a related director's effort is greater than the one of an unrelated director's effort. Hence, some directors in family business should have higher marginal benefit of effort and they should be willing to put more effort to control a company than those in a non-family owned firm where directors are usually unrelated. With higher effort put by some directors and other things being the same, a listed family business may have better performance than a listed non-family business may.

A diagram can be used to illustrate the higher effort level of a related director in a family business.



In the above diagram, a related director shares the same marginal cost curve of effort with a unrelated director. Yet, a related director has higher marginal benefit of effort. Hence, his marginal benefit curve of effort is at the right of the one for a non-related director. At the optimal effort level, the marginal cost is equal to the marginal benefit of effort. Accordingly, the two optimal effort levels for both related director ($e^*_{related}$) and unrelated director ($e^*_{unrelated}$) can be found. It can be seen that the former one is higher than the latter one. That means a related director will put more effort than an unrelated director will. Since there should be some related directors in family business willing to put more effort, family business can have higher probability to get better performance.

In fact, the higher marginal benefit mentioned above is the consequence of partly internalizing the positive externality of a director's effort in a firm. This idea of internalization is similar to the one conclusion of Becker (1981) about altruism. Look at director A's marginal benefit of his optimal effort level. The direct benefit of his effort to him is only the part of

$$\alpha \frac{dU_A}{d\pi} \frac{d\pi}{de_A}$$

and the part left is

$$(\theta \cdot \beta) \frac{dU_A}{d\pi} \frac{d\pi}{de_A}$$

which can be viewed as a part of marginal external benefit of director A's effort and

now it is also a fraction of A's marginal benefit of his effort because A has already internalized the amount of ($\theta \cdot \beta$) of the positive externality of his effort in a firm. He has not fully internalized the externality since he is not a real altruist. He only cares about the related director B's benefit. More precisely, he cares about the portion θ of the related director B's benefit as he can only benefit from θ of B's corporate income.

All in all, what mentioned above is only from director A's point of view, but all the things derived and the explanation proposed above can be applied to director B's situation too. That means when B decides his optimal effort level to maximize his utility, he is also willing to internalize part of A's benefit derived from B's effort. Moreover, the model suggested here can be extended to a case with more than two related directors in a family business. In such circumstance, each director's utility depends on more than one related director's corporate income. That is each director internalizes the external benefit of his effort to more than one related director.

To conclude, with the model and the explanation proposed above, it is supposed that a listed family business may have better performance since some of its directors are willing to put more effort to control the firm. It is because these directors are relatives and they have an incentive to internalize part of the external benefit of their effort to the related directors.

However, besides altruism, scholars admit that envy is also common in a family. If there is envy existing among family members, this can be conducive to internecine feuds. As a result, directors in the same family, of course, are not willing to internalize the external benefit of their effort among themselves. Thus, in the model,

θ cannot be positive. In contrast, they may do all they can to destroy the related and envied directors' interests in a firm because the envied director' benefit makes the envious director feel uncomfortable. It seems that the envied director' income from the firm is a loss for the envious director. Therefore, in an extreme case, θ in the model may be negative. That means the envious director thinks that the related and envied director's income decreases his utility through producing a negative effect on his income. With the negative θ, the marginal benefit of an envious director in family business is smaller than the one of other unrelated director.

With the smaller marginal benefit of effort, the envious director finds that he should put less effort to control the firm comparing with other unrelated directors. This may imply that some directors in family business may work less hard because of the conflicts and feuds among related directors. They are even willing to sacrifice their own incomes to lower the envied directors' income by doing some irrational decision, such as putting less effort in monitoring a firm owned by their whole family.

In short, family businesses monitored by some related directors may have better performance or worse performance than other firms where directors have no family relationship. To see how the existence of family relationship among directors affects corporate performance, an empirical research should be carried out.

3.3 Concentrated Ownership among Family Members

Besides the presence of family relationship, another criterion met by family businesses may also affect corporate performance. A firm is regarded as a family business when a family possesses a large shareholding of the firm. That means there

must be concentrated ownership in a family business. In fact, there are already many papers about ownership concentration among the controllers of firms. Scholars believe that controllers of a firm with large shareholdings may act differently from those owning small shares. They think that large shareholders as controllers of firms may work harder to improve firm's performance. However, some point out that owners with large shareholdings may also do something that is harmful to a firm. Several of their researches are mentioned in the literature review, so their ideas are just summarized and used in this part rather than developing a model to explain the effect of concentrated ownership on corporate performance. Actually, large shareholder of a firm may be corporation or state. However, in Hong Kong, such large shareholders are usually families. In order words, a certain number of firms with concentrated ownership in Hong Kong are family businesses.

During these several decades, many studies about the relationship between ownership concentration and corporate performance have been carried out. No matter what results these studies can find, they mainly base on two assumptions of the effect of concentrated ownership on corporate performance. The first assumption supports that the more concentrated ownership a firm possesses, the better a firm performs. It is because if an owner has more shares of a firm, his wealth will be more dependent on the value of the firm's shares. Then he will have higher incentive to control the firm in order to ensure the firm performs well and has high value. As a result, a firm with concentrated ownership can have a better performance than a diffusely held firm can. Morck et al (1988) calls this assumption as "convergence-of-interests hypothesis". Since family businesses have concentrated ownership, they may have better performance.

The second assumption, on the other hand, suggests that concentrated ownership may bring about worse corporate performance. It is because when an owner holds many shares, he can have more voting power and more direct access to corporate resources. Hence, it is easier and less costly for a large shareholder to consume corporate resources. If it is the case, large shareholder's aim is no longer only maximizing firm's value, but also making expropriation. Without doubt, a firm with such large shareholder will have worse performance. Morck et al (1988) calls this assumption as "entrenchment hypothesis". Hence, family businesses with concentrated ownership may make expropriation at the expense of other small shareholders and corporate performance. As a result, the performance of family businesses may be worse.

It seems that both assumptions are rational and reasonable, they may also be able to explain the situation in real world. If the effect of the first assumption dominates, family businesses should perform better; if the effect of the second assumption dominates, family businesses should perform rather badly. Accordingly, listed family businesses with concentrated ownership may perform better or even more badly. How dose the concentrated ownership affect family business? It should be an empirical question.

In brief, whether the performance of family businesses, which meet the two criteria, is better than the one of non-family businesses should be found out empirically.

Chapter 4 Methodology

This chapter introduces a methodology used to test the hypotheses mentioned in the last chapter. In order to see if family businesses really perform better and the two criteria met by family businesses really affect corporate performance or not, a simple data analysis and regression models are used.

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4.1 Simple Data Analysis

For the data analysis, all observations in the sample are classified into family businesses and non-family businesses. After that, the average performance of each group is figured out and comparisons can be made.

Family businesses vs. non-family businesses

In order to distinguish family businesses from non-family businesses, a family business index is set up. This index is actually a dummy variable which takes on a value of either one and zero. If the index of a firm is one, it means that this firm is a family business. If the index is zero, it means the firm is a non-family business. To figure out the value of the index for each firm, two things of every firm in the sample should be found out. Firstly, the family relationship among all directors in every firm is checked out. This information can be found by looking at the biographical details in annual reports of listed companies. Note that disclosing of directors' relationships is not legally mandatory. However, many companies willingly disclose such information. Actually, annual reports are the only sources of such information shown

to the public. Business registration records do not contain information on family relationship among shareholders or board directors. Published papers, such as Porta (1999), studying corporate ownership structure in Hong Kong also rely on annual reports for family relationship information. The results of family relationship among directors in the sample are shown in table8.

Once two or more directors in a firm are relatives, this firm meets the first criterion of being a family business. Then the next thing should be found out is the family's shareholding of the firm where some directors are relatives. A family's shareholding is calculated by summing up the shareholding percentages of all related directors on board. It is a legal requirement for all listed companies in Hong Kong to show their directors' shareholdings in annual reports. The Exchange Listing Rules require companies to show the total number or amount of securities in which each director and chief executive is interested, and their interests are distinguished into four categories. They are personal interests, family interests, corporate interests and other interests. Thus, it is not difficult to find out the total shareholdings of all related directors. Actually, not all firms can have the data of families' shareholdings because some of them do not have related directors. The information of families' shareholdings is shown in table2 and will be discussed in Chapter five. If a family's shareholding of a firm is equal to or over a certain amount of percentage, the value of its family business index is one, which means that this firm is regarded as family business.

There are three different amount of percentage of the family's shareholding used to define family business in this thesis. They are 10 percent, 20 percent and 35 percent. The reason of using them has been already explained before. In order words, there

are three family business indexes in this thesis. They are called "Fam10", "Fam20" and "Fam35". Specifically, "Fam10" ("Fam20" or "Fam35") of a firm equals one if the firm has two or more related directors who hold 10 (20 or 35) percent or more of the shareholdings together. The values of these three family business indexes of the firms in the sample are shown in table2 and the detailed procedure of figuring them out can be seen in appendix one under the subtitle "Fam35".

After finding out the values of family business indexes, the 62 firms can be classified into family business and non-family business. Then the average performance of family businesses and non-family businesses can be calculated and compared. The results of comparison will be presented in Chapter six. In this thesis, the corporate performance is indicated by ROE. ROE stands for "returns on equity", which is calculated by multiplying a ratio of annual corporate returns to equity with 100 percent. More explanation for this corporate performance indicator can be found in appendix one.

With family relationship vs. without family relationship

Besides comparing the average performance between family businesses and non-family businesses, the average performance of different groups in accordance to the two criteria met by family businesses are also compared. Firstly, the 62 firms in the sample are classified into two groups. One includes the firms with related directors and the other group includes those without related directors. Then the average performance of each group is calculated and compared, which will be presented in Chapter six. The result can show whether firms with related directors can perform better or not. This may imply if family relationship can impose positive

effect on corporate performance of family businesses or not.

With concentrated ownership vs. without concentrated ownership

To see the effect of second criterion, which is the concentrated ownership held by family, met by family businesses, the 62 firms should be classified into different groups according to the sizes of their families' shareholdings and then the average performance of each group can be calculated and compared. However, not all the 62 firms are family businesses, so not all of them have the data of families' shareholdings. Therefore, it is not possible to see how family's shareholding itself makes the performance of family businesses different from non-family businesses. Nevertheless, it is still possible to compare the performance of firms having concentrated ownership with those having dispersed ownership.

Different scholars use different concentration indexes to indicate the degree of ownership concentration in their studies. For example, Demsetz and Lehn (1985) use the percentage of shares controlled by the top five and the top 20 shareholders in their models and Morck et al (1988) use the percentage of shares held by all board members of a firm. The concentration index used here is the same with the one of Morck et al (1988). The board ownership of each firm is calculated by adding up the shareholding percentages of all directors in a firm. Such information of the 62 firms can be found in their annual reports. The result of their board ownership is shown in table2 and will be discussed in Chapter five.

After finding out the board ownership, the 62 firms are classified into several groups according to their board ownership and then their average performance of each group

can be calculated and compared. It can show whether firms with concentrated ownership can have better performance on average or not. The results of the comparison will be presented in Chapter six.

Note, however, that the results found by data analysis may not be so accurate and creditable. It is because even if the average performance of the firms classified as family businesses is better, such better performance may just be due to other uncontrolled variables which can also affect the corporate performance. Hence, regression should be used to investigate if family businesses can really perform better. It is because other factors, which also influence the corporate performance, can be controlled in regression.

4.2 Regression Models

Effect of being family business on corporate performance

In order to see the effect of being family business on corporate performance, the family indexes mentioned in above are used as dummy variables in the following regressions separately. They are:

ROE = $\alpha + \beta_1$ Fam10 + control variables

ROE = $\alpha + \beta_1$ Fam20 + control variables

ROE = $\alpha + \beta_1$ Fam35 + control variables

where ROE stands for "returns on equity", which is calculated by multiplying a ratio of annual corporate returns to equity with 100 percent. It is used to measure corporate performance. More explanation for this corporate performance indicator can be found in appendix one.

As mentioned before, "Fam10" is a family business index. It is also a dummy variable which equals one if two or more related directors having 10 percent or more of the shareholdings together. It is equal to zero if either only one director has 10 or more percent of the shareholding but no family relationship with other directors or the related directors in board only has less than 10 percent of the shareholdings. This variable tries to capture the effect of being a family business, which meets the two criteria, on the corporate performance. In more precise language, "Fam10" tries to capture the effect of family relationship and concentrated ownership held by family on corporate performance. Besides "Fam10", there are also "Fam20" and "Fam35" as the dummy variables. Their definitions are similar to "Fam10". The only difference is the minimal amount of family's shareholding used to define family business. Their definitions are also listed in table1 in appendix three.

The procedure of finding out the values of family business indexes for the 62 firms is mentioned before. To repeat, the relationship of directors is checked out first. If some of the directors are related in a firm, their shareholdings are added up to an amount to represent the family's shareholding. If the family's shareholding exceeds 10, 20 and 35 percent, then the value of "Fam10", "Fam20" and "Fam35" is one respectively. The more detailed procedure of figuring them out can be found in appendix one.

If the coefficient of "Fam10", "Fam20" or "Fam35" is positive with statistical significance, it implies that family businesses meeting the two criteria do perform better than non-family businesses. The regression result will be presented in Chapter six. All the control variables will be explained later.

Effects of family relationship and concentrated ownership on performance

Besides the above regression models, the other regression is set up as follow:

ROE = $\alpha + \beta_1$ Famrela + β_2 Brdshare + control varaibles

where "Famrela" is a dummy variable that is equal to one if two or more directors on board are from the same family no matter how much corporate ownership they have. It tries to capture the effect of the first criterion met by family business. That is the presence of family relationship among directors. If the coefficient of "Famrela" is positive with statistical significance, it can prove that a firm in which two or more directors have family relationship can perform better. In other words, this firm can have better performance than a firm where all board members are not related This may imply that the hypothesis, which suggests that related directors have incentive to internalize the external benefits of their effort at controlling firms, is valid. To repeat, if the coefficient of "Famrela" is positive with statistical significance, which implies that family businesses should have better performance partly because of the effect of family relationship among directors.

To see the effect of concentrated ownership held by family on corporate performance, a variable indicating family's shareholding of each firm should be used in the regression. However, as mentioned before, not all firms have this information since not all of them are family businesses. Therefore, it is not possible to see the effect of concentrated ownership held by family on corporate performance directly. Nonetheless, it is still possible to study the effect of concentrated ownership on corporate performance.

For capturing the effect of ownership concentration on corporate performance,

different scholars use different concentration indexes in their regressions. The concentration index used here is the board ownership "Brdshare". Board members are responsible to control a firm and monitor the management of a firm. Some of the board members are just employees but most of them have shares of firms. Particularly, owners with large shareholdings usually have seats on board. If a family is a large shareholder, it should have representatives on board. In the sample, about two-third of the large board ownership of listed companies is due to the large family's shareholding. In some cases, the board ownership is exactly the same with the family's shareholding. However, not all firms with concentrated board ownership are family businesses. It is because some large board ownership is due to the existence of one large shareholder on board. According to the definition of a family business here, a firm largely held by one individual who has no relatives with shareholdings and seats on board is not family business. In the sample, about one-third of the firms with large board ownership are largely owned and controlled by individuals, but not two or more relatives in a family.

The variable "Brdshare" is a percentage of shareholdings held by all board members in a firm. If the coefficient of "Brdshare" is positive with statistical significance, it proves that a firm with more concentrated ownership has better performance. It is consistent with the hypothesis that when owners' wealth is more dependent on corporate value and performance, they are more willing to put effort at controlling their firms. Hence, it is reasonable to conclude that better performance of family businesses is partly due to the concentrated ownership. However, if the coefficient of "Brdshare" is negative with statistical significance, it proves that a firm with more concentrated ownership performs more badly than other diffusely held firms do. According to the hypothesis, the negative coefficient is due to the large shareholders'

expropriation of firms. Thus, concentrated ownership in family businesses may worsen the their performance instead of improving it.

Control Variables

To deal with the possibility that a variety of factors can jointly affect the performance indicator "ROE" besides the effects of ownership concentration and family relationship, the regression models involve some control variables. They are "Lnass", "founder", "history", "Prop", "Cong", "Bank", "Ind" and "Ut".

"Lnass" is a logarithm of annual total assets of a firm. It is used to control the size effect of a firm on corporate performance. People commonly believe that large firms may have higher returns since their turnovers are usually higher. Moreover, large firms may have greater competition power that can help firms to get higher returns. Hence, controlling the size effect of firms is necessary. More detailed explanation for the calculation of "Lnass" is shown in appendix one.

The second control variable is a dummy variable "Founder". It is equals to one if the founder of a firm is still either a chairman, vice-chairman, managing director or an executive director in board. If this variable of a firm is one, it implies that the founder of this firm is still active in controlling the company. It is believed that a founder of a firm is willing to devote more time and energy in governing his firm. With his contribution, the firm can get a better performance more probably. Actually, Morck et al (1988) has already found an evidence for such belief.

The next control variable is "History". It represents the age of a firm in 1996 that is

the year to be studied in this thesis. It is calculated by subtracting the number of the year in which a firm was established from 1996. Controlling the ages of firms is because return of an old firm may be very different from the one of a young firm. For example, young firms may need some time to settle down and deal with many problems in the beginning, which may affect their returns in the first few years.

The five control variables left are all dummy variables. Each of them represents a sector a firm belongs to. "Prop", "Cong", "Bank", "Ind" and "Ut" refer to the sector of property and construction, the sector of conglomerates, the sector of bank and finance, industrial sector and the sector of utilities respectively. If a firm belongs to one of the sectors mentioned here, the dummy variable representing the sector is set as one and the other four are zero. If a firm does not belong to any one of the five sectors, all the five dummies are zero for this firm. It is not difficult to understand why the effects of the sectors firms belong to should be controlled. It is because people usually believe that each sector has its own particular nature and attributes that may affect the corporate performance. Hence, it is critical to control the effects coming from the sectors firms belong to.

More explanation for the calculation and the sources of the information about the control variables are shown in appendix one.

Chapter 5 Sample Description

According to Porta et al (1999), Hong Kong comparatively has more family businesses than other economies. Moreover, people usually believe that the family businesses in Hong Kong perform quite well. Hence, this thesis tries to use Hong Kong as a case study to see if family businesses really perform better or not.

Only listed firms involved

Firms in the sample used are listed companies in Hong Kong stock market. The unlisted Hong Kong firms are excluded because there is a divergence between unlisted firms' strength and the listed firms' strength. It is not suitable to use them together in the comparison between corporate performance of family business and that one of non-family business. According to the listing rules set up by the Stock Exchange of Hong Kong Limited (SEHK), a company which wants to be listed must have a trading record of not less than three financial years during which the profit to shareholders must not be less than HK$20,000,000. In addition, the expected market capitalization of the company at the time of listing must be at least HK$100,000,000. In other words, listed companies do have greater strength than unlisted ones.

Among several hundreds of listed companies in Hong Kong stock market, the 33 firms constituting the Hang Seng Index (HSI) and the 50 firms constituting the Hang Seng MidCap 50 Index (HSMC50I) are chosen to be included in the sample. In fact, the 33 constituent stocks are representatives of the stock market in Hong Kong. It is because the aggregate market capitalization of these stocks accounts for

about 70% of the total market capitalization on the SEHK. According to the selection criteria, constituent stocks of the HSI are selected from stocks constituting the top 90% of the total market capitalization and the top 90% of the total turnover of listed firms on the SEHK. That means these 33 firms are representing relatively large and strong companies in Hong Kong. Apart from involving the 33 large firms, the sample also includes 50 listed firms constituting HSMC50I. Looking at the name of the index, it is easy to discern that these 50 firms are representatives of listed companies with medium capitalization on the SEHK. So far, both large and medium-sized traded firms in Hong Kong stock market are involved in this research. One thing should be mentioned is that the compositions of the HSI and HSMC50I are revised frequently basing on the selection criteria. The compositions of them used here were constructed in 1999.

Using cross-sectional data in1996

The research in this thesis focuses on the cross-sectional relationship between corporate performance and family businesses. Hence cross-sectional data of listed companies are used. It takes time to decide which year should be chosen to study. Finally, the year of 1996 is adopted in the investigation. This is the year just before the Asian Financial Crisis. Therefore, everything ran normally and the economical environment was with less noisiness. Firms had not yet been affected by unpredictable factors in the financial crisis and their performance could reveal their own real situation and strength. This is the reason why 1996 information of firms is chosen.

There are totally 83 listed firms in HSI and HSMC50I. However, 13 of the firms

were set up after 1996, so they are not involved in the sample. Also, six out of 83 are excluded due to their incomplete information. Moreover, two firms whose shares are classified as "H share" are excluded. In total, only 62 out of the 83 listed companies are used in the sample.

Sources of the information

There are mainly three sources of the information used in this thesis. The first one is 1996 annual report of every firm out of the 62 companies. Data of board ownership and biographical details of directors are all obtained from annual reports. The second source of the data is Tomson Financial Datastream. Information of ROE and annual total assets of firms are acquired from this datastream. The third source is the Wardley Cards (2000) which is issued by HSBC Broking (Data Services) Limited. Background information of firms and the classification of sector each firm belongs to are found from these Wardley Cards.

Description of the sample

- The 62 firms

Table4 shows that among the 62 listed firms in the sample, 32 of them have related directors on their boards. That means over 50 percent of them can meet one criterion of being family businesses. However, some out of these 32 do not meet the second criterion, which means they do not have large family's shareholdings. When "Fam10" is used to define family business, 30 out of 62 firms are counted as family businesses. When "Fam20" is used, 28 out of 62 are regarded as family businesses.

When "Fam35" is used instead, only 24 family businesses are left. It can be seen that the amount of family businesses do not change very much as different family business indexes are used. However, no matter which family business index is used, at least over 38 percent of the Hong Kong listed firms in the sample are regarded as family businesses. This number is not small.

- *Sector classification*

In table3, the 62 firms are classified into six groups according to the sectors they belong to. Both sectors of property and conglomerates have 14 firms. There are nine firms belong to the sector of bank. Only four and three belong to the sectors of industry and utilities respectively. The left 19 firms are classified into the sector of other which includes I.T., transportation, toys, food and hotels, etc.

Table6 shows that about 79 percent of firms in the sector of property have related directors on boards. This sector has the largest number of firms meet the first criterion to be family businesses. There are about 67 percent, 56 percent, 42 percent, 36 percent and 25 percent of the firms in the sectors of utilities, bank, other, conglomerates and industry have related directors respectively.

When the second criterion met by family business is also considered, firms can be classified into family businesses or non-family businesses. Table6 shows the percentages of family businesses in other sectors. Under the definition of "Fam10", the sector of property has the most family businesses. About 79 percent of the firms in this sector are classified as family businesses. Actually, many large property and construction companies in Hong Kong are owned and controlled by families, such as

Li Ka Shing's family and Lee Shau Kee's family. The sector of bank has the smallest number of family businesses. Only about 21 percent of the firms in this sector are grouped as family businesses. When "Fam20" is used to define family business, the sector of property and the sector of bank still have the largest number and the smallest number of family businesses respectively. When "Fam35" is used to define family business, the sector of bank, again, has the smallest number of family businesses. However, the percentage of family businesses in the sector of utilities is a little bit higher than the one in the sector of property this time. The percentage of family businesses in each sector can be found in table6.

- Board ownership

Table2 lists out all board shareholdings as well as families' shareholdings of the 62 firms. As mentioned before, not all firms in the sample have family's shareholding since some of them are not owned by families. Yet, about two-third of large board ownership is due to large families' shareholdings.

One thing should be noted that when board ownership is calculated, a complicated situation is encountered. Board ownership of a company is calculated by adding up all directors' shareholdings then over the total shares issued by the company. This information can be found in annual report where all directors' interests, which refer to their shareholdings in the company, are listed out. These directors' interests include directors' personal interests, directors' family interests, directors' corporate interests and directors' other interests. The complicated situation comes from the complexity of the corporate interests owned by directors. It is because some directors' corporate interests of the company are held through other companies. For

example, in Dao Heng Bank (DHB), director Quek Leng Chan and his two sons, who are also directors, together have a corporate interests that is the ownership of 490,205,664 shares of DHB. However, they do not directly hold these 490,205,664 shares. These shares are owned by another company called Guoco Group Limited (GCL) where Mr. Quek has ownership. Therefore, if people want to know how many percentages of the 490,205,664 shares are actually held by Mr. Quek and his family, people should firstly know how large the ownership of GCL Mr. Quek and his family has. However, the ownership information of GCL is not listed out in annual reports since it is not a listed company. Therefore, this thesis just simply treats the 490,205,664 shares as the shareholding that are held by Mr. Quek and his sons. Because of this limitation, "Brdshare" of some firms may be overstated. It is an inevitable problem of computing a director's shareholding of a firm when he holds his shareholding through another firm that he only owns a part of it but the public does not know how large the part is.

Table5 shows how many firms among the 62 are in each range of the board ownership. Morck et al (1988) divides the board ownership into three groups. They are zero to five percent, five to 25 percent and over 25 percent. When such grouping is used, about 26 percent of the 62 firms are in the range of zero to five, eight percent of the 62 firms are in the range of five to 25 and 66 percent of the 62 firms are in the range over 25. That means over half of the firms in this sample have at least 25 percent board ownership and they are mainly in the sector of other and the sector of property. When the range of the board ownership is grouped into zero to 35 percent, 35 to 50 percent and over 50 percent, the percentages of the firms in the three ranges are about 44 percent, 10 percent and 47 percent respectively. That means there are about 50 percent of the firms in this sample with boards owning 50 or over 50

percent of shares. It reviews that Hong Kong firms have quite concentrated ownership.

Table7 shows how many firms in each sector are in different ranges of board ownership. It can be seen that the sector of other and the sector of property have larger numbers of firms with concentrated ownership.

- *Families' shareholdings*

Besides board ownership, table2 also shows the families' shareholdings of the firms where there are related directors. Family's shareholding is calculated by adding up the percentages of shares held by all related directors on board. In order to ensure the shareholding held by a group of related directors or their family is really substantial, the information about the substantial shareholders of firms is checked too. Such information is also shown in annual reports at the request of the law. The name of every person or company holding 10 percent or more shareholding has to be disclosed and labeled as a substantial shareholder of a firm. The shareholding of such person or company has to be shown too. Usually if the total shareholding of all related directors is above 10 percent, their names and their family members' names or the names of other companies held by them will be shown as the substantial shareholders in annual report. However, there are two exceptional cases in the present observations. They are Hysan Development and New World Development.

In Hysan Development, several members of Lees' family have seats in board. Their total shareholdings of the firm are only 4.41 percent. However, the substantial shareholder of Hysan Development is a company called Lee Hysan Estate Company

Limited that holds 40.3 percent of Hysan Development. After checking the information of Lee Hysan Estate in Company Registry, it can be known that those related directors in Lees' family of Hysan Development are also directors and owners of Lee Hysan Estate Company Limited. Therefore, the substantial shareholder of Hysan Development is actually Lees' family and the 40.3 percent is used to represent the shareholdings of Lees' family in Hysan Development instead of using 4.41 percent.

Similarly, in New World Development, several members of Chengs' family have seats in board. Their total shareholdings are only 8.42 percent. However, the substantial shareholder of New World Development is Chow Tai Fook Enterprise Limited that holds 38.55 percent of New World Development. After checking the information of Chow Tai Fook in Company Registry, it is known that Chengs' family is the main owner and controller of Chow Tai Fook Enterprise Limited. Thus, the 38.55 percent is used to represent the shareholdings of Chengs' family in New World Development instead of using 8.42 percent. As a result, not surprisingly, the families' shareholdings are even larger than the board ownership in these two firms.

For more information about the family businesses in this sample, table8 shows the names of the families who own the companies and the relationship among the directors in the companies which meet the two criteria to be family businesses.

Chapter 6 Empirical Result and Implication

Based on the methods mentioned in chapter four and the sample including Hong Kong listed companies, the empirical results are found as follow. The results of the data analysis are presented first. After that, the outcomes of the regression models are shown.

6.1 Results of Data Analysis

In this section, all the 62 observations are classed into different groups. Then the average ROE of each group is calculated and some comparisons can be carried out to see if family businesses meeting the two criteria have better average performance or not. On the whole, the highest ROE and the lowest ROE of the 62 firms are 75.3 percent and –120.94 percent respectively with the mean of 11.22 percent.

Family businesses having higher average ROE

Since there are three percentages of families' shareholdings used for defining the family businesses, there are three groups of comparisons between the average ROE of family businesses and the one of non-family businesses. In more precise language, each of the three groups of comparison takes the dummy variables "Fam10", "Fam20" and "Fam35" as an index to classify family businesses from other firms separately.

Table10.3 shows that in the group where "Fam10" is used to distinguish family

businesses from non-family businesses, 30 out of the 62 observations belong to family business. Their average ROE is 14.69 percent that is double the one, 7.96 percent, for non-family businesses. It means that firms with related directors who together have 10 percent or more shareholdings can perform better. The t-statistic for the difference in mean is 6.11. If a 95 percent confidence interval is used, the hypothesis of having same mean of ROE by family businesses and non-family businesses can be rejected.

In the group where "Fam20" is used, 28 out of the 62 observations are classified as family businesses. Their average ROE is 14.47 percent. The average ROE of non-family businesses is just 8.54 percent. The result is similar to the one of using "Fam10". It is because only two firms are shifted from the category of family businesses to non-family businesses when "Fam20" replaces "Fam10" in use. The t-statistic for the difference in mean is 5.41 in this case. If 5 percent error is allowed, the hypothesis of having same mean of ROE by family businesses and non-family businesses can be rejected.

When "Fam35" is employed in the classification, 24 firms are grouped as family businesses. Their average ROE is 13.08 percent that is a little higher than the one of non-family businesses, 10.04 percent. The t-statistic is 3.06 in this case. Again, the hypothesis of having same mean of ROE by family businesses and non-family businesses can be rejected.

No matter which family business index is used to classify family businesses, the average ROE of family businesses is higher than the one of non-family businesses. All the results are also shown in table10.3. It seems that family businesses do have

better performance on average. However, merely these results cannot prove that the higher average ROE is mainly due to the effects of being family businesses since there may be other uncontrolled factors contributing to the better performance. Therefore, it is necessary to look at the regression results to see if family businesses meeting the two criteria can give positive effects on corporate performance or not.

The group with "family relationship" having higher average ROE

Table10.1 shows that there are totally 32 firms in the sample with one for the dummy variable "Famrela". It means that at least two directors in each of these 32 firms are relatives. Their average ROE is 14.9 percent that is higher than the average ROE, 7.29 percent, of the group where the firms have no related directors. It seems that when there is family relationship among directors, the firms can have better performance on average.

The group with concentrated ownership having higher average ROE

In order to see if firms with more concentrated ownership perform better or not, the 62 firms are firstly grouped according to "Brdshare", their board ownership. There are two sets of cutoff points for the grouping. The first set is five percent and 25 percent; the second set is 35 percent and 50 percent. The former set is suggested by Morck et al (1988) and the later one is proposed in this thesis. Using 35 percent as the first breakpoint is because the SEHK views this shareholding percentage as the least amount of shares a controlling shareholder should own. In other words, it is common to believe that once a shareholder has 35 percent of a corporate ownership, he has the right to control the firm's strategic direction and monitor the management.

The second breakpoint is set at 50 percent. It is because when a person has 50 percent or more of a corporate ownership, he automatically has a controlling power over all decisions of a firm since in almost every voting game among board directors, this shareholder can win without doubt.

By using the first set of cutoff points, the firms with more concentrated ownership do have better performance on average. The results are shown in table10.2. The average ROE of the firms with zero to five percent ownership concentration is 1.51 percent, e average ROE of the firms with five to 25 percent ownership concentration is 14.64 percent and the one for firms with over 25 percent ownership concentration is 14.59 percent. The first average ROE is much lower than the last two. That means the variation between the performance of firms with very dispersed ownership and the one of firms with more concentrated ownership is quite large. However, The last average ROE is not the highest but even a bit lower than the second one. It shows that the average performance of the firms with very concentrated ownership do not perform best. All these may imply that the effect of concentrated ownership is positive essentially but it becomes negative if the degree of concentration is too high. In other words, directors work harder if their wealth depends on firms more, but if they have more and more control of firms, they do have more power or chance to expropriate corporate resources. Thus, if firms have too concentrated ownership, the performance may be deteriorated. It is not always true that increasing ownership concentration is good for a firm.

The results and implication are similar to the above one if the second set of cutoff points of grouping is used. The results can be found in table10.2. The average ROE of the firms with zero to 35 percent ownership concentration is 3.56 percent, the

average ROE of the firms with 35 to 50 percent ownership concentration is 17.36 percent and the one for firms with over 50 percent ownership concentration is 17.08 percent.

Parenthetically, besides the above grouping, the 62 firms are also classified into different groups according to the control variables. The average ROE of each group is shown in table10.4 to10.6. Surprisingly, 12 firms in which founders are still active in controlling firms have much higher average ROE than those without active founders do. Thus, maybe the existence of active founder can really help a firm to have better performance.

6.2 Results of the Regression Models

In regression, more reliable effects of being family businesses on corporate performance can be found out by controlling those of other factors. The results of the regression models in the thesis are presented as the follow.

Effect of being family businesses on corporate performance

For the regression model where three family business indexes "Fam10", "Fam20" and "Fam35" are used to see if family businesses can have higher ROE or not, the results are found as below.

When "Fam10" is used, the result is

$$ROE = -48.5 + 7.2372\ Fam10 + control\ variables$$
$$(1.1806)$$

where the number in parenthesis is a T-ratio of the corresponding coefficient. This result shows that the coefficient of "Fam10" is positive and statistically significant at 0.243 level. When the definition of family business is based on "Fam10", the effect of being a family business on corporate performance is positive, yet the statistically significant level is not very high.[ii] The entire result of this regression is shown in table 11.1. Besides, the correlation among the independent variables in the regression model is checked. The result is shown in Table12.1. In fact, no two of the independent variables are significantly correlated with each other. None of the independent variables is redundant.

When "Fam20" is used, the result is

$$ROE = -47.36 + 5.3221\ Fam20 + control\ variables$$
$$(0.8678)$$

It can be seen that the coefficient of "Fam20" is smaller than the one of "Fam10" with even lower statistically significant level. It means that when the definition of family business is based on "Fam20", the positive effect of being a family business on corporate performance is smaller and less credible. The entire regression result is shown in table 11.2.The correlation of the independent variables is shown in table12.2. Again, no two of the independent variables are significantly correlated with each other.

When "Fam35", the strongest family business index among three, is used, the regression result is

$$ROE = -49.83 + 5.3839\ Fam35 + control\ variables$$
$$(0.8526)$$

The coefficient of "Fam35" is similar to the one of "Fam20" and also statistically

insignificant. The entire regression result is shown in table 11.3. The correlation of the independent variables is shown in table12.3. No two of the independent variables are significantly correlated with each other.

In brief, the effect of being a family business, which meets the two criteria suggested in this thesis, on corporate performance is positive. However, when the lowest requirement of ownership concentration in defining family business is increased from ten to 20 or 35 percent, the credibility of the positive effect is undermined.

With the insignificant results shown above, a new dummy variable is used in trial in the model. The variable called "Mandir" which stands for managing directors. It is equal to one when one of the related directors in family business is a managing director on board. It is equal to zero if the managing director is not a member of the family who holds a substantial proportion of shares in the company. In this case, the controlling family did bring in outside talent into the management team. To see the effect of outside talent on corporate performance, a regression of ROE on "Mandir" plus control variables was carried out and the results are shown as below:

$$ROE = -46.0776 + 4.2507\ Mandir + control\ variables$$
$$(0.6105)$$

The coefficient of "Mandir" is not statistically significant. That means the results do not support the hypothesis that the family relationship of the managing director with the controlling family has an impact on corporate performance. The entire regression result is shown in table 11.4.

Additionally, the results of regression models with both "Mandir" and family business index can be found in table11.5 to table11.7. Actually, the coefficients of all

family business indexes, "Fam10", "Fam20" and "Fam35", are still not very statistically significant and the coefficient of "Mandir" is even less insignificant than before. The correlation among independent variables in these three regression models is shown in table12.4 to table12.7.

Effects of family relationship and concentrated ownership on performance

When the effects of the family relationship and the ownership concentration on corporate performance are studied in the regression model, the result is found as follow:

Firstly, when only "Famrela" is used as the key variable in the regression, the result is

$$ROE = -46.41 + 6.5232\ Famrela + control\ variables$$
$$(1.0765)$$

where the number in parenthesis is T-ratio for the coefficient of "Famrela". It can be seen the effect of family relationship on corporate performance is positive but only statistically significant at 0.29 level. The entire regression result can be found in table 11.8.

Since the result shows that the effect of having family relationship among directors on corporate performance is not statistically significant, the dummy variable "Famrela" is modified a little bit. A modified variable is "Imfam" which stands for immediate family relationship. This variable is one when the related directors have father/mother-and-son/daughter or husband-and-wife relationship only. It is believed that benefit is transferred more commonly among immediate family. Therefore,

maybe such relationship can especially induce family members to put more effort to monitor a firm. The result of the regression with "Imfam" is shown as below:

ROE = - 45.2771 + 0.059564 Imfam + control variables

(0.0085447)

However, the effect of having immediate family on corporate performance is even more statistically insignificant. No conclusion about the influence of family relationship on performance can be made. The entire regression result is shown in table11.9.

When only "Brdshare" is entered as the key independent variable, the result is

ROE = - 59.56 + 0.2126 Brdshare + control variables

(1.7659)

It shows that when the board ownership increases one percent, the ROE will increase 0.21 percent. That means the effect of concentrated ownership on corporate performance is positive. The statistically significant level of this effect is higher than the one of "Famrela". The entire regression result is shown in table 11.10.

If the two key independent variables, "Famrela" and "Brdshare" are considered at the same time in the regression, the result becomes

ROE = - 58.55 + 2.6689 Famrela + 0.1905 Brdshare + control variables

(0.4059) (1.432)

This result shows that when the two independent variables are involved in the regression at the same time, their coefficients are still positive but statistically significant level will be lowered, especially the one for "Famrela". The entire regression result can be found in table11.11. The correlation among the independent variables can be found in table12.8. Neither one of the independent variables is very

correlated to the other ones.

When "Imfam" is used instead of "Famrela", the result is:

ROE = -58.5444 – 2.2454 Imfam + 0.22003 Brdshare + control variables

(-0.32301) (1.7801)

In this case, the effect of having immediate family is even negative. However, with such low statistically significant level, this negativity is meaningless. On the contrary, the effect of concentrated ownership is more significant. The entire regression result can be found in table11.12. The correlation of the independent variables are shown in table12.9. Neither one of the independent variables is very correlated to the other ones.

All the above results show that the effect of family relationship is statistically insignificant. That means they cannot support the hypothesis that family relationship among directors has effects on corporate performance. It means that family business do not get any advantageous or disadvantageous effect by having related directors. Yet, it is more plausible that increasing the degree of ownership concentration can help a firm to have better performance since the statistically significant level of the positive coefficient of "Brdshare" is higher. That means it is more possible that family businesses having more concentrated ownership can get better performance due to such reason.

To have a supplement, the effects of board ownership is also investigated by using the method suggested by Morck et al (1988), that is using the piecewise linear regression models. All the results can be found in appendix two.

Summary

In sum, when family business indexes are used in the regression model, the results are not statistically significant. That is to say the positive effect of being a family business, which meets the two criteria, on corporate performance is not very credible. Consequently, the answer found here for the question "do family businesses perform better?" is "uncertain".

In addition, the regression result suggests that the family relationship among directors does not impose much impact on corporate performance, either positive or negative one. Hence, there is no evidence that family businesses can have better or worse performance comparing with other firms due to the existence of family relationship among directors who monitor the firms. On the contrary, it is more credible that the concentrated ownership can affect the corporate performance. The regression result implies that increasing ownership concentration can improve the corporate performance. Accordingly, family businesses should have better performance by virtue of their highly concentrated ownership.

With the above conclusion, the first part of the hypothesis about the family relationship cannot be verified, whereas the second part about concentrated ownership is more valid. Thus, being one type of firms having concentrated ownership, family businesses probably can have better performance, but they cannot get benefit from being controlled by related directors.

Chapter 7 Conclusion

This thesis investigates if family businesses, which meet the two criteria, can have better performance or not. Finally, the results cannot show family businesses perform better than other firms do.

The empirical research finds that having concentrated ownership tends to give positive effect on corporate performance. It supports the hypothesis that large shareholders are willing to work harder due to the impact of their convergence of interests. Family businesses with concentrated ownership can benefit from it.

However, the empirical results cannot provide evidence for the existence of the effect of family relationship among directors. That means the results show that the presence of related directors in family businesses gives neither positive nor negative effect on corporate performance – at least on ROE. Possibly, human thought and behavior are so complex that cannot be deduced from a simple hypothesis. Even in the same family, members may have different attitudes and reactions towards relatives' benefits in their family businesses. Some may treat relatives' benefits as credits, some may treat them as debits and some may just ignore them. Moreover, the effects of husband-wife relationship, father-son relationship, sibling relationship and relative relationship by marriage may be totally different. Therefore, simply using a variable in regression cannot prove the hypothesis about directors' altitude towards their related directors' income. It is a weakness of the regression models set up in this thesis.

Nevertheless, it is not appropriate to conclude that the performance of family businesses has no difference with the one of non-family businesses by just basing on this research. It is because this thesis just focuses at two criteria met by family businesses. There may be some other criteria that can greatly affect family businesses' performance not yet considered here. If more criteria met by family businesses can be included in the empirical research, it can give a more comprehensive investigation into the effects of being a family business on corporate performance. Moreover, ROE is only one type of performance indicators. There may be more proper financial variables able to indicate corporate performance than ROE. Using other proper indicators may possibly help to get more significant results. Furthermore, this thesis just chooses one year to be studied, but if panels of data covering several years are used, this may help to reveal the actual situation more exactly. Perhaps, family businesses can have better performance only under certain circumstances. If it is true, finding out such circumstances is probably another focus in the further study of family businesses' performance.

Although, the results of this thesis are not strong enough to make a clear and inspiring conclusion, it can be viewed as a supplementary research to the study of family business. As mentioned before, scholars studying family business seldom investigate empirically how different the family businesses' performance is from other firms'. Also, this thesis tries to use a new approach for studying family business instead of using case analyses and questionnaires that are usually employed by previous scholars. Undoubtedly, the question of whether family businesses perform better or not is still researchable. Further study on this really can help us to understand more about family business that does exist commonly in our business world.

[i] The idea here is just similar to but not the same with "Rotten Kid Theorem". They are similar in the sense that both claim that family members are willing to internalize the externalities of his action to other members. However, "Rotten Kid Theorem" assumes that there is at least one real altruist in a family, but this assumption is not necessary in this thesis to develop our simple idea.

[ii] Among the 62 firms, the board ownership information of two firms does not match with the commonly known information shown by mass media or other sources. The two firms are Sino Land and Wharf Holding. Therefore, the regression model with "Fam10" was carried out after eliminating these two observations. And the results are just similar to the one including the two firms. The regression results can be found in table 11.17.

Appendix 1. Definition and Calculation of the Variables

The definitions and the calculations of the variables are in more detail here.

ROE

ROE stands for "returns on equity". It is acquired from Tomson Financial Datastream. The equation of ROE for Hong Kong companies is "(Earned for ordinary / Equity capital & reserves) * 100" where earned for ordinary is the 1996 profit used to calculate earnings per share. The profit is the net profit arrived at after deducting tax, minority interest, pre-acquisition profits and preference dividends attributable to ordinary shareholders, and where equity capital and reserves are 1996 total shareholders' equity less any preference capital. A high ROE represents a better corporate performance.

However, there is a problem of using the ROE described as above. The problem is caused by the difference between a "flow concept" and a "stock concept". Return of a firm in 1996 is a variable with a "flow concept". It is calculated by accumulating the day-to-day net profit of a firm. In contrast, equity of a firm in 1996 is a variable with a "stock concept". It is reported in dollar value on the day when financial data of a firm are recorded and prepared for an annual announcement. So the data of annual equity reported are just one-day information, but not the average one of the whole year. In order to use a more fitting and representative ROE in 1996, the average equity of two successive years instead of only the equity in 1996 is used. That is to say, ROE in this paper is calculated by "(Earned for ordinary in 1996 / average capital and reserves between 1995 and 1996) * 100".

Brdshare

"Brdshare" is a percentage of shares held by all board members of a firm. The information of board members is abstracted from1996 annual reports of the 62 firms. All directors' interests of a firm where they have seats in board are shown in an annual report. These directors' interests include directors' personal interests, directors' family interests, directors' corporate interests and directors' other interests. All of the interests are actually the numbers of shares held by the directors themselves, by their family or by other corporations where the directors have interests.

Note that when "Brdshare" is calculated, a complicated situation is encountered. This situation comes from the complexity of the corporate interests owned by directors. It is because some directors' corporate interests of a firm are held through other companies. For example, in Dao Heng Bank (DHB), director Quek Leng Chan and his two sons, who are also directors, together have a corporate interests that is the ownership of 490205664 shares of DHB. However, they do not directly hold these 490205664 shares. These shares are owned by another company called Guoco Group Limited (GCL) where Mr. Quek has ownership. Therefore, if we want to know how many percentages of the 490205664 shares are actually held by Mr. Quek and his family, we should firstly know how large the ownership of GCL Mr. Quek and his family has. However, the ownership information of GCL is not listed out in annual reports since it is not a listed company. Therefore, we just simply treat the 490205664 shares as the shareholding that are held by Mr. Quek and his sons. Because of this limitation, "Brdshare" of some firms may be overstated. It is an

inevitable problem of computing a director's interests of a firm when he holds his interests through another firm that he only owns a part of it but the public does not know how large the part is.

Famrela

"Famrela" is a dummy variable which is used to distinguish the firms where some of the directors are related from those where all directors are not related. This variable is equal to one if two or more directors are relatives and it is zero if all directors are not related in a firm. The annual reports of the 62 firms have been checked up to collect this information.

Fam35

"Fam35" is a dummy variable called family business index. It is used to indicate if a firm is a family business. It is equal to one if there are two or more related directors who together have 35 percent or more shareholdings in a firm. In order to figure out the value of this dummy variable for each firm, the family relationship among all directors in every firm is checked out first. This information can be found in annual reports of listed companies. Once it is known that some of the directors in a firm are relatives, two things are figured out next. One is the total shareholdings of all related directors. Since every director's shareholding of the company has to be listed out, including his personal shareholding, his family's shareholding and his shareholding held through other corporations, it is not difficult to find out the total shareholdings of all related directors. For each firm, these total shareholdings of all related directors usually represent its family's shareholding. Hence, if the total shareholdings of all

related directors in a firm is above 35 percent, it means that the shareholding held by their family is also over 35 percent. Then, "Fam35" of this firm is one.

In order to ensure the shareholding held by a group of related directors or their family in a company is really substantial, the information about the substantial shareholders of the company is checked too. This is the other thing we have to look at after finding out there are related directors in a firm. Such information is shown in annual reports too. The name of every person or company holding ten percent or more shareholding has to be disclosed and labeled as a substantial shareholder of a firm. The shareholding of this person or company has to be shown too. Usually if the total shareholding of all related directors in a company is above ten percent, their names and their family members' names or the names of their other companies will be announced as substantial shareholders of the company in annual report. Their shareholdings are listed out there too. Therefore, we can confirm if a family really holds large shareholding of a firm by looking at the information of the substantial shareholders.

However, there are two exceptional cases in our observations. They are Hysan Development and New World Development. In Hysan Development, several members of Lees' family have seats in board. Their total shareholdings of the firm are only 4.41 percent. However, the substantial shareholder of Hysan Development is a company called Lee Hysan Estate Company Limited that holds 40.3 percent of Hysan Development. After checking, we know that those related directors in Lees' family of Hysan Development are also directors and owners of Lee Hysan Estate Company Limited. Therefore, the substantial shareholder of Hysan Development is actually Lees' family. We use 40.3 percent to represent the shareholdings of Lees'

family in Hysan Development instead of using 4.41 percent.

Similarly, in New World Development, several members of Chengs' family have seats in board. Their total shareholdings are only 8.42 percent. However, the substantial shareholder of New World Development is Chow Tai Fook Enterprise Limited that holds 38.55 percent of New World Development. After checking, we know that Chengs' family is the main owner and controller of Chow Tai Fook Enterprise Limited. Thus, we use 38.55 percent to represent the shareholdings of Chengs' family in New World Development instead of using 8.42 percent.

Fam20

"Fam20" is also a family business index. It is equal to one if there are two or more related directors who together have 20 percent or more shareholdings in a firm. The process of figuring out the value of this dummy variable for each firm is exactly the same with the one of "Fam35".

Fam10

"Fam10" is another family business index. It is equal to one if there are two or more related directors who together have 10 percent or more shareholdings in a firm. The process of figuring out the value of this dummy variable for each firm is exactly the same with the one of "Fam35".

Lnass

"Lnass" is the logarithm of total assets of a firm in 1996. It is used to capture the effects of firm size on corporate performance. The information of total assets of each firm is extracted from Tomson Financial Datastream.

Founder

"Founder" is a dummy variable that is equal to one if the founder of a firm is still either a chairman, a vice chairman, a managing director or an executive director in a board. This information can be found out in Wardley Cards and annual reports.

History

It is calculated by "1996 - the establishment year of a firm" where the establishment date can be found at Wardley Cards which list out all important events of each firm with ascendant order of time.

Prop

"Prop" is a dummy variable that is equal to one if a firm belongs to the sector of property and construction. There are totally 14 among the 62 firms classified into this sector according to Wardley Cards.

Cong

"Cong" is a dummy variable that is equal to one if a firm belongs to the sector of conglomerates. There are totally 14 among the 62 firms classified into this sector by Wardley Cards.

Bank

"Bank" is a dummy variable that is equal to one if a firm belongs to the sector of bank and finance. There are totally nine among the 62 firms classified into this sector according to Wardley Cards.

Ind

"Ind" is a dummy variable that is equal to one if a firm belongs to the sector of industry. There are totally four among the 62 firms classified into this sector according to Wardley Cards.

Ut

"Ut" is a dummy variable that is equal to one if a firm belongs to the sector of utilities including the provision of electricity, gas and water. There are totally three among the 62 firms classified into this sector according to Wardley Cards.

Appendix two: Piecewise linear regression model suggested by Morck et al (1988)

Piecewise linear regression model

In Morck et al (1988), it claims that the relationship between ownership concentration and corporate performance is not completely linear, but it should be different in different ranges of ownership concentration in a firm. After that, many scholars follow their method to investigate the relationship between ownership concentration and corporate performance. Hence, the "piecewise" idea of Morck et al is used here for a trial to capture the effect of ownership concentration. The regression model is set as:

$$\text{ROE} = \alpha + \beta_1 \text{ Famrela } + \beta_2 \text{ Brd0to5 } + \beta_3 \text{ Brd5to25 } + \beta_4 \text{ Brdover25 } + \text{ control variables}$$

where "Famrela" is still used to capture the effect of the family relationship among directors on corporate performance. The other three variables "Brd0to5", "Brd5to25" and "Brdover25" created by Morck et al are used to capture the effect of ownership concentration in three different ranges of concentration on corporate performance. The three variables are calculated as follow:

Brd0to5 = board shareholding if board shareholding $< 5\%$

= 5% if board shareholding $\geqq 5\%$

Brd5to25 = 0% if board shareholding $< 5\%$

= board shareholding minus 5% if $5\% \leqq$ board shareholding $< 25\%$

= 20% if board shareholding ≧ 25%

Brdover25 = 0% if board shareholding < 25%

= board shareholding minus 25% if board shareholding ≧ 25%

Based on these three variables, the slopes of the piecewise linear regression are allowed to change at 5 percent and 25 percent. Actually, there is no tight rule of determining the turning points. Hence, the other set of turning points is used in this regression besides the one suggested by Morck et al. The two turning points are 35 percent and 50 percent.

Using 35 percent as the first breakpoint is because the SEHK views this shareholding percentage as the least amount of shares a controlling shareholder should own. In other words, it is common to believe that once a shareholder has 35 percent of a corporate ownership, he has the right to control the firm's strategic direction and monitor the management. The second breakpoint is set at 50 percent. It is because when a person has 50 percent or more of a corporate ownership, he automatically has a controlling power over all decisions of a firm since in almost every voting game among board directors, this shareholder can win without doubt. Accordingly, the three variables capturing the effect of ownership concentration at different ranges are "Brd0to35", "Brd35to50" and "Brdover50". The are calculated as the follow:

Brd0to35 = board shareholding if board shareholding < 35%

= 35% if board shareholding ≧ 35%

Brd35to50 = 0% if board shareholding < 35%

= board shareholding minus 35% if 35% ≦ board shareholding < 50%

= 15% if board shareholding ≧ 50%

Brdover50 = 0% if board shareholding $<$ 50%

= board shareholding minus 50% if board shareholding $\geqq$ 50%

In this piecewise linear regression, if the coefficient of "Famrela" is still positive (negative) with high statistically significant level, it proves that the family relationship among directors can really affect corporate performance positively (negatively) even the effect of concentrated ownership is considered in the way suggested by Morck et al (1988). Moreover, the coefficients of "Brd0to5", "Brd5to25" and "Brdover25" can show the effects of ownership concentration in the ranges of zero to five percent, five to 25 percent and over 25 percent of ownership concentration respectively. Likewise, the coefficients of "Brd0to35", "Brd35to50" and "Brdover50" represents the effects of ownership concentration in the ranges of zero to 35 percent, 35 to 50 percent and over 50 percent of ownership concentration respectively. If they are all statistically significant, it can prove that ownership concentration really affect corporate performance in different ranges. And if their signs are different, which means that different ranges of ownership concentration do have different effects on corporate performance. The results of these piecewise linear regressions will be shown in chapter six.

Results of the piecewise linear regression model

Before capturing the effect of family relationship as well, it is better to take a look at the results of the piecewise linear regression without "Famrela". Using the turning points suggested by Morck et al, the result is found as follow:

$$ROE = -60.47 + 5.4697\ Brd0to5 - 1.064\ Brd5to25 + 0.2666\ Brdover25$$

$$(1.5422) \qquad (-1.1436) \qquad (1.0796)$$

+ control variables

The entire regression result is shown in table11.13. Notably, the signs of the coefficients of all the three independent variables are coincident with those found by Morck et al in their research. The result suggests that for each one- percent increase in ownership between zero to five percent, ROE rises by about five percent. For each one-percent increase in ownership from five to 25 percent, ROE declines about one percent. As ownership rises beyond 25 percent, ROE rises, but at the slower rate of about 0.3 percent for each one percent increase in ownership. Most of the family-owned firms in the sample have very concentrated ownership, it implies that the marginal effect of further increasing their ownership concentration is still positive but very small. However, how do the effects vary within the upper part of the concentration? Hence, the second set of turning points proposed in the thesis is used in trial.

The set of turning points proposed in this thesis is 35 percent and 50 percent. The reason of choosing them has been explained before. When they are used, the regression result is found as follow:

$$ROE = -59.41 + \underset{(0.3132)}{0.1022Brd0to35} + \underset{(1.09)}{0.8678Brd35to50} - \underset{(-0.4004)}{0.1915\ Brdover50}$$

+ control variables

In this result, the coefficients of the three variables, especially the first and the third one, are statistically insignificant. Hence, not many conclusions can be given based on the result. However, it still shows a trend that an additional increase in ownership concentration in the more concentrated ranges, which are above 50 percent of shareholding, may possibly worsen the corporate performance. If it is true, family businesses, which have already got the very concentrated ownership, should not

further increase their ownership of the firms. The entire regression result is shown in table11.14.

Now "Famrela" is added into the piecewise linear regression to see the effect of family relationship on corporate performance when the effects of ownership concentration is considered in the way suggested by Morck et al (1988). The regression results are found as follow:

$$ROE = -59.44 + 1.6271 Famrela + 5.3186 Brd0to5 - 1.0739 Brd5to25 + 0.2649 Brdover25$$
$$(0.2386) \qquad (1.4627) \qquad (-1.1422) \qquad (1.062)$$
$$+ \text{control variables}$$

$$ROE = -58 + 2.3128 Famrela + 0.0612 Brd0to35 + 0.8629 Brd35to50 - 0.1821 Brdover25$$
$$(0.3356) \qquad (0.1767) \qquad (1.0739) \qquad (-0.3768)$$
$$+ \text{control variables}$$

The entire results of these two regressions are shown in table11.15 and 11.16. The coefficient of "Famrela" is very statistically insignificant with using either set of turning points for ownership concentration. That means the existence of the effect of family relationship cannot be proved here.

According to the above results, it seems that the effect of ownership concentration on corporate performance is more credible than the one of family relationship.

Appendix Three: Tables

Table 1 Definitions of variables

ROE	-Returns on equity -(corporate returns in 1996/the average of firms' total assets between 1995 and 1996) *100
Famrela	-a dummy variable which equals one if two or more directors are relatives and equals zero if otherwise
Brdshare	-a shareholding percentage of all board members in a firm
Fam35	-family business index -a dummy variable which is equal to one if there are two or more related directors who together have 35 percent or more of the shareholding in a firm
Fam20	-family business index -a dummy variable which is equal to one if there are two or more related directors who together have 20 percent or more of the shareholding in a firm
Fam10	-family business index -a dummy variable which is equal to one there are two or more related directors who together have 10 percent or more of the shareholding in a firm
Lnass	-the logarithm of total assets of a firm in 1996
Founder	-a dummy variable which is equal to one if the founder of a firm is still either a chairman, a vice chairman, a managing director or an executive director in a board
History	-a number calculated by (1996 - the establishment year of a firm)
Prop	-a dummy variable which is equal to one if a firm belongs to the sector of property and construction
Cong	-a dummy variable that is equal to one if a firm belongs to the sector of conglomerates
Bank	-a dummy variable which is equal to one if a firm belongs to the sector of bank and finance
Ind	-a dummy variable which is equal to one if a firm belongs to the sector of industry
Ut	-a dummy variable which is equal to one if a firm belongs to the sector of utilities

Table 2 Information of "Brdshare", "Famshare" and Family Business Indexes of 62 firms

Name	Brdshare	Famshare	Famrela	Fam10	Fam20	Fam35
Allied Group	24.79	--	0	0	0	0
Amoy Properties	58.59	--	0	0	0	0
Asia Tele-Net & Tech.	48.29	--	0	0	0	0
ASM Pacific Tech.	50.96	--	0	0	0	0
Bank Of East Asia	9.52	2.45	1	0	0	0
Cathay Pacific	0.00	--	0	0	0	0
Century City	63.63	--	0	0	0	0
Cheung Kong Hdg.	33.84	33.78	1	1	1	0
Cheung Kong Infr.	86.58	--	0	0	0	0
China Everbright Intl.	0.00	--	0	0	0	0
China Internet Global	40.70	--	0	0	0	0
China Pharmaceutical	7.17	--	0	0	0	0
China Res.Entrep.	0.00	--	0	0	0	0
China Star Entertainment	59.47	59.47	1	1	1	1
CITIC Pacific	27.37	18.52	1	1	0	0
CLP Holdings Ltd	33.29	33.27	1	1	1	0
Dao Heng Bank Gp.	71.80	71.79	1	1	1	1
Denway Motors Ltd.	0.00	--	0	0	0	0
Dickson Concepts	55.56	--	0	0	0	0
E-Kong Group Ltd.	0.04	--	0	0	0	0
Esun Hdg. Ltd.	61.52	61.52	1	1	1	1
First Pacific	56.52	54.32	1	1	1	1
FPB Bank	1.45	--	0	0	0	0
Hang Lung Dev.	52.22	35.71	1	1	1	1
Hang Seng Bank	0.86	0.72	1	0	0	0
Henderson Inv.	70.55	70.28	1	1	1	1
Henderson Ld.Dev.	68.40	68.24	1	1	1	1
Hinet Holdings Ltd.	61.00	60.92	1	1	1	1
Hing Kong Holdings	34.22	34.22	1	1	1	1
HK.& China Gas	13.38	--	0	0	0	0
Hong Kong Construction	34.63	11.92	1	1	0	0
Hong Kong Electric	51.66	34.63	1	1	1	0
HSBC Hdg.	0.96	--	0	0	0	0
Hutchison Whamp.	46.07	45.64	1	1	1	0
Hysan Dev.	3.26	40.25	1	1	1	1

ICG Asiaworks Ltd.	38.22	37.84	1	1	1	1
IDT Intl.	62.86	62.3	1	1	1	1
Intl.Bank Of Asia	0.00	--	0	0	0	0
JCG Holdings	54.78	--	0	0	0	0
Johnson Electric Hdg.	59.87	59.64	1	1	1	1
Lai Sun Dev.	56.49	56.39	1	1	1	1
Legend Holdings	26.55	--	0	0	0	0
Li & Fung	58.30	58.03	1	1	1	1
Lippo China Res.	72.60	72.6	1	1	1	1
Liu Chong Hing Bank	69.62	69.58	1	1	1	1
Mingly	65.58	65.58	1	1	1	1
Moulin Intl.	60.56	60.56	1	1	1	1
New World Dev.	0.57	38.55	1	1	1	1
Oriental Union Hdg.	71.06	--	0	0	0	0
Regal Hotels Intl.Hdg.	71.91	--	0	0	0	0
Sino Land	0.31	--	0	0	0	0
Sun Hung Kai Props.	46.58	46.32	1	1	1	1
Swire Pacific 'A'	0.15	--	0	0	0	0
Tian An China Invs.	0.07	--	0	0	0	0
Tingyi Cymn.Isle.Hdg.	68.16	68.16	1	1	1	1
Top Glory International	57.38	--	0	0	0	0
TV.Broadcasts	39.95	--	0	0	0	0
Vanda Systems	63.42	63.42	1	1	1	1
Wharf Hdg.	0.04	--	0	0	0	0
Wheelock & Co.	0.78	--	0	0	0	0
Wing Lung Bk.	43.31	43.31	1	1	1	1
Yugang International	79.25	--	0	0	0	0

Where "Brdshare" stands for the board ownership

"Famshare" stands for family's shareholding

"Famrela" stands for family relationship. If a firm where some of the directors are relatives, then its "Famrela" equals one, zero otherwise.

"Fam10" is a family business index. If a firm is a family business under the definition stated by "Fam10", then its "Fam10" is one, zero otherwise.

"Fam20" is a family business index. If a firm is a family business under the definition stated by "Fam20", then its "Fam20" is one, zero otherwise.

"Fam35" is a family business index. If a firm is a family business under the definition stated by "Fam35", then its "Fam35" is one, zero otherwise.

Table 3 Six sectors to which the 62 firms belong

Sector	Number of firms	Percentage of the firms in the sector
Property and construction	14	22.58%
Conglomerates	14	22.58%
Bank and Finance	9	14.52%
Industry	4	6.54%
Utilities	3	4.84%
other	19	30.65%
Total	62	100 %

Table 4 Number of firms with related directors and Number of family businesses among the 62 firms

No. of firms with related directors among the 62 firms (% of the firms having related directors among the 62 firms)	No. of family businesses under definition of "Fam10" among the 62 firms (% of the family businesses under definition of "Fam10" among the 62 firms)	No. of family businesses under definition of "Fam20" among the 62 firms (% of the family businesses under definition of "Fam20" among the 62 firms)	No. of family businesses under definition of "Fam35" among the 62 firms (% of the family businesses under definition of "Fam35" among the 62 firms)
32 (51.62%)	30 (48.39%)	28 (45.16%)	24 (38.71%)

Table 5 Number of firms in different ranges of ownership concentration among the 62 firms

Numbers of firms in the range of 0% - 5% board ownership (% of firms in this range among the 62 firms)	Numbers of firms in the range of 5% - 25% board ownership (% of firms in this range among the 62 firms	Numbers of firms in the range of over 25% board ownership (% of firms in this range among the 62 firms
16 (25.81%)	5 (8.06%)	41 (66.13%)

Numbers of firms in the range of 0% - 35% board ownership (% of firms in this range among the 62 firms)	Numbers of firms in the range of 35% - 50% board ownership (% of firms in this range among the 62 firms	Numbers of firms in the range of over 50% board ownership (% of firms in this range among the 62 firms
27 (43.55%)	6 (9.68%)	29 (46.77%)

Table 6 Number of firms with related directors and number of family businesses in each sectors

	Famrela	Fam10	Fam20	Fam35
Property & Construction	5 (35.71%)	5 (35.71%)	4 (28.57%)	3 (21.43%)
Conglomerates	11 (78.57%)	11 (78.57%)	10 (71.43%)	9 (64.29%)
Bank & Finance	5 (55.56%)	3 (21.43%)	3 (21.43%)	3 (21.43%)
Industry	1 (25%)	1 (25%)	1 (25%)	1 (25%)
Utilities	2 (66.67%)	2 (66.67%)	2 (66.67%)	0 (66.67%)
Other	8 (45.11%)	8 (42.11%)	8 (42.11%)	8 (42.11%)

Each number in above shows how many firms in a sector have related directors or is classified as family businesses under different definition

The number in the parentheses represents the percentage of the firms which have related directors or are classified as family businesses in the sector they belong to. For example, there are five firms belonging to the sector of property and construction have related directors. That means about 36 percent of the firms in the sector of property and construction have related directors.

Table 7 Number of firms in different ranges of ownership concentration in each sector

	Board ownership between 0% - 5%	Board ownership between 5% - 25%	Board ownership over 25%
Property & Construction	4 (28.57%)	0 (0%)	10 (71.43%)
Conglomerates	5 (35.71%)	1 (7.14%)	8 (57.14%)

Bank & Finance	4 (44.44%)	2 (22.22%)	3 (33.33%)
Industry	1 (25%)	1 (25%)	2 (50%)
Utilities	0 (0%)	1 (33.33%)	2 (66.67%)
Other	2 (10.53%)	0 (0%)	16 (84.21%)

	Board ownership between 0% - 35%	Board ownership between 35% - 50%	Board ownership over 50%
Property & Construction	7 (50%)	1 (7.14%)	6 (42.86%)
Conglomerates	7 (50%)	2 (14.29%)	5 (35.71%)
Bank & Finance	6 (66.67%)	0 (0%)	3 (33.33%)
Industry	2 (50%)	0 (0%)	2 (50%)
Utilities	2 (66.67%)	0 (0%)	1 (33.33%)
Other	3 (15.79%)	3 (15.79%)	12 (63.16%)

Each number in above shows how many firms in that range of board ownership in the each sector they belong to.

The number in the parentheses represents the percentage of the firms which are in that range of board ownership in the sector they belong to.

For example, there are four firms belonging to the sector of property and construction are in the range of zero to five percent board ownership. That means about 29 percent of the firms in the sector of property and construction are in this range.

Table 8 Information of the family businesses in the sample

Name of the Company	Shareholding of the family *	Who are in the board
Cheung Kong Holding	33.78% by Li Ka Shing's family	A father and a son
China Star Entertainment	59.47% by Heung Wah Keung's family	A husband and a wife
CITIC Pacific	18.52% by Yung Chi Kin's family	A father and a son
CLP Holdings Ltd	33.27% by Michael D. Kadoorie's family	Two brothers-in-law
Dao Heng Bank Group	71.79% by Quek Leng Chan's family	Three brothers
Esun Holdings Ltd	61.52% by Lim Por Yen's family	A father, a mother and two sons
First Pacific	54.32% by Soedono Salim's family	A father and a son
Hang Lung Development	35.71% by Ronnie C Chan's family	Two brothers
Henderson Investment	70.28% by Lee Shau Kee's family	Two brothers and two sons
Henderson Land Development	68.24% by Lee Shau Kee's family	Three brothers, three sons and a son-in-law
Hinet Holdings Ltd	60.92% by Wong Chue Meng's family	A father, a son and a daughter-in-law
Hing KongHoldings	51.66% by Lo Ying Shek's family	A father, two sons and a daughter
Hong Kong Construction	11.92% by Yu Ching Po's family	A father and a daughter
Hong Kong Electric	34.63% by Li Tzar Kuoi's family	Two brothers
Hutchison Whamp.	45.64% by Li Ka Shing's family	A father, two sons
Hysan Development	40.25% by Lees' family	Five relatives
ICG Asiaworks Ltd	37.84% by Luk Chung Lam's family	A father and a son

IDT International	62.3% by Raymond Chan's family	A husband and a wife
Johnson Electric Holdings	59.64% by Wang Koo Yik's family	A father and three sons
Lai Sun Development	56.39% by Lim Por Yen's family	A father, a mother and two sons
Li & Fung	58.03% by Fung Kwok Ling's family	Two brothers
Lippo China Resources	72.6% by Mochtar Riady's family	A father and two sons
Liu Chong Hing Bank	69.58% by Liu's family	Nine relatives
Mingly Corporation	65.58% by Cha Chi Ming's family	A father, a mother, a son and a daughter
Moulin International	60.56% by Ma Bo Kee's family	Three brothers, two sisters and two sons
New World Development	38.55% by Cheng Yu Tung's family	Two brothers and a son
Sun Hung Kai Properties	46.32% by Kwok Ping Sheung's family	Three brothers
Tingyi (Cayman Islands) Holdings	68.16% by Wei Ing Chon's family	Three relatives
Vanda Systems	63.42% by Lam Hon Nam's family	Three relatives by marriage
Wing Lung Bank	43.31% by Wu Po Ko's family	A father and five sons

* "Shareholding of the family" is the total shareholding of all related directors in a firm, except the ones of Hysan Development and New World Development. The explanation is provided in Chapter five.

Table 9 Data Set of Regression

Name	ROE96	Brdshare	Famrela	Fam10	Fam20	Fam35	Founder	Mandir	Imfam
Allied Group	8.396	24.79	0	0	0	0	0	0	0
Amoy Properties	5.622	58.59	0	0	0	0	0	0	0
Asia Tele-Net & Tech.	19.623	48.29	0	0	0	0	0	0	0
ASM Pacific Tech.	23.789	50.96	0	0	0	0	1	0	0
Bank Of East Asia	17.223	9.52	1	0	0	0	0	0	0
Cathay Pacific	17.972	0	0	0	0	0	0	0	0
Century City	8.596	63.63	0	0	0	0	0	0	0
Cheung Kong Hdg.	22.835	33.84	1	1	1	0	1	1	1
Cheung Kong Infr.	17.376	86.58	0	0	0	0	0	0	0
China Everbright Intl.	0.281	0	0	0	0	0	0	0	0
China Internet Global	11.549	40.7	0	0	0	0	1	0	0
China Pharmaceutical	13.382	7.17	0	0	0	0	0	0	0
China Res.Entrep.	9.887	0	0	0	0	0	0	0	0
China Star Entertainment	-23.897	59.47	1	1	1	1	0	0	1
Citic Pacific	21.72	27.37	1	1	0	0	0	0	1
CLP Holdings Ltd	24.405	33.29	1	1	1	0	0	0	0
Dao Heng Bank Gp.	18.97	71.8	1	1	1	1	0	1	0
Denway Motors Ltd.	-120.94	0	0	0	0	0	0	0	0
Dickson Concepts	17.198	55.56	0	0	0	0	1	0	0
E-Kong Group Ltd.	2.097	0.04	0	0	0	0	0	0	0
Esun Hdg. Ltd.	-0.912	61.52	1	1	1	1	0	0	1
First Pacific	75.3	56.52	1	1	1	1	0	0	1
FPB Bank	19.582	1.45	0	0	0	0	0	0	0
Hang Lung Dev.	10.334	52.22	1	1	1	1	0	0	0
Hang Seng Bank	18.588	0.86	1	0	0	0	0	0	0
Henderson Inv.	9.922	70.55	1	1	1	1	1	1	0
Henderson Ld.Dev.	21.77	68.4	1	1	1	1	1	1	0
Hinet Holdings Ltd.	0.541	61	1	1	1	1	0	1	0
Hing Kong Holdings	-35.227	34.22	1	1	1	1	0	1	1
HK.& China Gas	16.858	13.38	0	0	0	0	0	0	0
Hong Kong Construction	13.899	34.63	1	1	0	0	0	0	1
Hong Kong Electric	25.315	51.66	1	1	1	0	0	0	0
HSBC Hdg.	20.853	0.96	0	0	0	0	0	0	0
Hutchison Whamp.	18.82	46.07	1	1	1	0	0	0	1
Hysan Dev.	4.409	3.26	1	1	1	1	0	1	0
ICG Asiaworks Ltd.	7.043	38.22	1	1	1	1	0	0	1
IDT Intl.	12.538	62.86	1	1	1	1	1	0	1
Intl.Bank Of Asia	19.014	0	0	0	0	0	0	0	0
JCG Holdings	23.993	54.78	0	0	0	0	1	0	0

Johnson Electric Hdg.	9.799	59.87	1	1	1	1	0	1	1
Lai Sun Dev.	5.572	56.49	1	1	1	1	1	1	1
Legend Holdings	-48.896	26.55	0	0	0	0	0	0	0
Li & Fung	43.345	58.3	1	1	1	1	0	1	0
Lippo China Res.	8.088	72.6	1	1	1	1	0	1	1
Liu Chong Hing Bank	13.002	69.62	1	1	1	1	0	1	0
Mingly	7.137	65.58	1	1	1	1	0	1	1
Moulin Intl.	31.427	60.56	1	1	1	1	1	1	0
New World Dev.	8.414	0.57	1	1	1	1	0	1	0
Oriental Union Hdg.	23.749	71.06	0	0	0	0	0	0	0
Regal Hotels Intl.Hdg.	3.727	71.91	0	0	0	0	0	0	0
Sino Land	4.421	0.31	0	0	0	0	0	0	0
Sun Hung Kai Props.	10.825	46.58	1	1	1	1	0	1	0
Swire Pacific 'A'	8.894	0.15	0	0	0	0	0	0	0
Tian An China Invs.	1.765	0.07	0	0	0	0	0	0	0
Tingyi Cymn.Isle.Hdg.	25.5	68.16	1	1	1	1	0	1	0
Top Glory International	5.437	57.38	0	0	0	0	0	0	0
TV.Broadcasts	36.302	39.95	0	0	0	0	0	0	0
Vanda Systems	32.58	63.42	1	1	1	1	1	1	0
Wharf Hdg.	2.803	0.04	0	0	0	0	0	0	0
Wheelock & Co.	6.035	0.78	0	0	0	0	0	0	0
Wing Lung Bk.	17.347	8.39	1	1	1	1	0	1	1
Yugang International	39.442	79.25	0	0	0	0	1	0	0

Table9 Data Set of Regression (continue)

Name	History	Lnass	Prop	Cong	Bank	Ind	Ut
Allied Group	24	15.46	0	1	0	0	0
Amoy Properties	47	17.4	1	0	0	0	0
Asia Tele-Net & Tech.	27	13.05	0	0	0	0	0
ASM Pacific Tech.	21	14.21	0	0	0	1	0
Bank Of East Asia	78	18.54	0	0	1	0	0
Cathay Pacific	48	18.02	0	0	0	0	0
Century City	15	17.34	0	1	0	0	0
Cheung Kong Hdg.	25	18.38	1	0	0	0	0
Cheung Kong Infr.	1	16.25	0	0	0	0	0
China Everbright Intl.	35	14.49	0	1	0	0	0
China Internet Global	24	15.72	0	1	0	0	0
China Pharmaceutical	37	13.41	0	0	0	1	0
China Res.Entrep.	31	16.68	0	1	0	0	0
China Star Entertainment	9	12.59	0	0	0	0	0
Citic Pacific	11	17.73	0	1	0	0	0
CLP Holdings Ltd	95	17.35	0	0	0	0	1
Dao Heng Bank Gp.	6	18.45	0	0	1	0	0
Denway Motors Ltd.	4	14.08	0	0	0	1	0
Dickson Concepts	26	15	0	0	0	0	0
E-Kong Group Ltd.	2	12.46	0	0	0	0	0
Esun Hdg. Ltd.	24	14.11	0	0	0	0	0
First Pacific	8	18	0	1	0	0	0
FPB Bank	3	17.11	0	0	1	0	0
Hang Lung Dev.	36	17.77	1	0	0	0	0
Hang Seng Bank	44	19.78	0	0	1	0	0
Henderson Inv.	24	16.89	1	0	0	0	0
Henderson Ld.Dev.	20	18.18	1	0	0	0	0
Hinet Holdings Ltd.	22	15.02	0	1	0	0	0
Hing Kong Holdings	76	13.87	1	0	0	0	0
HK.& China Gas	134	16.74	0	0	0	0	1
Hong Kong Construction	23	16.08	1	0	0	0	0
Hong Kong Electric	20	17.32	0	0	0	0	1
HSCB Hdg.	31	21.86	0	0	1	0	0
Hutchison Whamp.	19	18.7	0	1	0	0	0
Hysan Dev.	26	17.55	1	0	0	0	0
ICG Asiaworks Ltd.	19	14.61	0	0	0	0	0
IDT Intl.	19	13.41	0	0	0	0	0
Intl.Bank Of Asia	26	16.93	0	0	1	0	0
JCG Holdings	19	15.27	0	0	1	0	0

Johnson Electric Hdg.	36	15.37	0	0	0	0	0
Lai Sun Dev.	37	16.91	1	0	0	0	0
Legend Holdings	8	14.18	0	0	0	0	0
Li & Fung	59	14.88	0	0	0	0	0
Lippo China Res.	23	16.08	1	0	0	0	0
Liu Chong Hing Bank	48	17.12	0	0	1	0	0
Mingly	8	16.31	0	1	0	0	0
Moulin Intl.	31	13.39	0	0	0	1	0
New World Dev.	26	18.38	1	0	0	0	0
Oriental Union Hdg.	14	13.1	0	0	0	0	0
Regal Hotels Intl.Hdg.	16	16.81	0	0	0	0	0
Sino Land	25	17.4	1	0	0	0	0
Sun Hung Kai Props.	24	18.75	1	0	0	0	0
Swire Pacific 'A'	56	18.65	0	1	0	0	0
Tian An China Invs.	10	14.57	1	0	0	0	0
Tingyi Cymn.Isle.Hdg.	5	15.81	0	0	0	0	0
Top Glory International	23	15.64	0	1	0	0	0
TV.Broadcasts	31	14.72	0	0	0	0	0
Vanda Systems	14	12.82	0	0	0	0	0
Wharf Hdg.	10	18.57	0	1	0	0	0
Wheelock & Co.	78	17.66	0	1	0	0	0
Wing Lung Bk.	63	17.66	0	0	1	0	0
Yugang International	11	14.14	0	0	0	0	0

Table 10 Average ROE comparison between different groups of firms

Table 10.1

	Average ROE (No. of firms)
Famrela = 0	7.294% (30)
Famrela = 1	14.90% (32)

Table 10.2

	Average ROE (No. of firms)
Brdshare 0%-5%	1.51% (16)
Brdshare 5%-25%	14.64% (5)
Brdshare over 25%	14.59% (41)
Brdshare 0%-35%	3.56% (27)
Brdshare 35%-50%	17.36% (6)
Brdshare over50%	17.08% (29)

Table 10.3

	Average ROE (No. of firms)
Fam10 = 1	14.69% (30)
Fam10 = 0	7.96% (32)
Fam20 = 1	14.47% (28)
Fam20 = 0	8.54% (34)
Fam35 = 1	13.08% (24)
Fam35 = 0	10.04% (38)

Table 10.4

	Average ROE (No. of firms)
Founder = 1	21.05% (12)
Founder = 0	8.86% (50)

Table 10.5

	Average ROE (No. of firms)
Property and Construction	10.12% (14)
Conglomerates	13.24% (14)
Bank and Finance	18.73% (9)
Industry	-13.09% (4)
Utilities	22.19% (3)
Other	13.03% (19)

Table 10.6

	Average ROE (No. of firms)
Lnass 12-14	8.48% (9)
Lnass 14-16	4.65% (18)
Lnass 16-18	12.38% (22)
Lnass over 18	20.25% (13)

Table 10.7

	Average ROE (No. of firms)
History 1-10	-1.93 (12)
History 11-30	14.72 (29)
History 31-50	14.85 (13)
History over 50	12.36 (8)

Table 11 Results of the regression models

Table 11.1 Ordinary Least Squares Estimation with "Fam10"

Dependent variable : ROE96			
Number of observations : 62			
Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	-48.4976	30.3299	-1.5990[.116]
FAM10	7.2372	6.1303	1.1806[.243]
FOUNDER	20.4514	7.6209	2.6836[.010]
HISTORY	.060897	.14266	.42688[.671]
LNASS	3.6175	2.0271	1.7846[.080]
PROP	-19.8036	9.7802	-2.0249[.048]
CONG	-4.8655	9.2574	-.52559[.601]
BANK	-5.0170	11.7130	-.42833[.670]
IND	-27.8627	12.6263	-2.2067[.032]
UT	-1.1862	17.3275	-.068456[.946]
R-Squared : 0.26328			
R-Bar-Squared : 0.13577			

Table 11.2 Ordinary Least Squares Estimation with "Fam20"

Dependent variable : ROE96

Number of observations: 62

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	-47.3637	30.4854	-1.5537[.126]
FAM20	5.3221	6.1328	.86781[.389]
FOUNDER	20.3825	7.6922	2.6498[.011]
HISTORY	.051064	.14301	.35707[.722]
LNASS	3.6130	2.0394	1.7716[.082]
PROP	-18.6594	9.7323	-1.9173[.061]
CONG	-4.5983	9.3430	-.49216[.625]
BANK	-5.0754	11.7874	-.43058[.669]
IND	-28.1923	12.7112	-2.2179[.031]
UT	-.14941	17.3882	-.0085926[.993]

R-Squared : 0.25433

R-Bar-Squared : 0.12527

Table 11.3 Ordinary Least Squares Estimation with "Fam35"

Dependent variable : ROE96			
Number of observations : 62			
Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	-49.8335	30.8687	-1.6144[.112]
FAM35	5.3839	6.3147	.85259[.398]
FOUNDER	20.7954	7.6572	2.7158[.009]
HISTORY	.037556	.14289	.26283[.794]
LNASS	3.7939	2.0489	1.8517[.070]
PROP	-18.6394	9.7356	-1.9146[.061]
CONG	-4.4904	9.3591	-.47979[.633]
BANK	-5.4671	11.7791	-.46413[.644]
IND	-28.1229	12.7263	-2.2098[.032]
UT	3.8880	17.4655	.22261[.825]
R-Squared : 0.25396			
R-Bar-Squared : 0.12484			

Table 11.4 Ordinary Least Squares Estimation with "Mandir"

Dependent variable : ROE96

Number of observations : 62

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	-46.0776	30.5279	-1.5094[.137]
MANDIR	4.2507	6.9627	.61050[.544]
FOUNDER	20.3254	7.7809	2.6122[.012]
LNASS	3.6456	2.0469	1.7811[.081]
HISTORY	.035145	.14381	.24440[.808]
PROP	-18.9356	10.0229	-1.8892[.064]
CONG	-5.1030	9.3461	-.54601[.587]
BANK	-6.0255	11.8469	-.50862[.613]
IND	-29.2612	12.6832	-2.3071[.025]
UT	2.8746	17.4411	.16482[.870]

R-Squared	.24891
R-Bar-Squared	.11892

Table 11.5 Ordinary Least Squares Estimation with "Fam10" and "Mandir"

Dependent variable is ROE96

Number of observations: 62

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	-48.7146	30.6122	-1.5913[.118]
FAM10	8.9054	8.5932	1.0363[.305]
MANDIR	-2.7032	9.6662	-.27965[.781]
FOUNDER	20.7983	7.7887	2.6703[.010]
LNASS	3.6046	2.0458	1.7619[.084]
HISTORY	.070026	.14759	.47446[.637]
PROP	-19.3136	10.0224	-1.9270[.060]
CONG	-4.9021	9.3415	-.52477[.602]
BANK	-4.5820	11.9202	-.38439[.702]
IND	-27.5943	12.7758	-2.1599[.036]
UT	-2.6171	18.2166	-.14367[.886]

R-Squared	.26440
R-Bar-Squared	.12017

Table 11.6 Ordinary Least Squares Estimation with "Fam20" and "Mandir"

Dependent variable is ROE96

Number of observations: 62

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	-47.4017	30.7899	-1.5395[.130]
FAM20	5.6996	9.3279	.61103[.544]
MANDIR	-.57113	10.5520	-.054126[.957]
FOUNDER	20.4363	7.8303	2.6099[.012]
LNASS	3.6096	2.0602	1.7521[.086]
HISTORY	.052693	.14750	.35723[.722]
PROP	-18.5318	10.1055	-1.8338[.073]
CONG	-4.5768	9.4423	-.48471[.630]
BANK	-4.9764	12.0420	-.41325[.681]
IND	-28.1249	12.8951	-2.1811[.034]
UT	-.44137	18.3672	-.024030[.981]

R-Squared	.25437
R-Bar-Squared	.10817

Table11.7 Ordinary Least Squares Estimation with "Fam35" and "mandir"

Dependent variable : ROE96

Number of observations : 62

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	-49.9982	31.4351	-1.5905[.118]
FAM35	5.6760	9.6417	.58869[.559]
MANDIR	-.42798	10.5953	-.040393[.968]
FOUNDER	20.8573	7.8822	2.6461[.011]
LNASS	3.8013	2.0768	1.8304[.073]
HISTORY	.038052	.14480	.26279[.794]
PROP	-18.5443	10.1084	-1.8345[.072]
CONG	-4.4676	9.4671	-.47191[.639]
BANK	-5.4136	11.9673	-.45236[.653]
IND	-28.0673	12.9237	-2.1718[.035]
UT	3.8863	17.6357	.22037[.826]

R-Squared	.25398
R-Bar-Squared	.10770

Table 11.8 Ordinary Least Squares Estimation **with "Famrela**

Dependent variable: ROE96			
Number of observations: 62			
Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	-46.4088	30.2900	-1.5321[.132]
FAMRELA	6.5232	6.0595	1.0765[.287]
FOUNDER	20.5720	7.6336	2.6949[.009]
HISTORY	.046083	.14219	.32409[.747]
LNASS	3.5146	2.0343	1.7276[.090]
PROP	-19.1677	9.7233	-1.9713[.054]
CONG	-4.5876	9.2950	-.49355[.624]
BANK	-5.9460	11.7374	-.50659[.615]
IND	-28.0710	12.6471	-2.2196[.031]
UT	.19488	17.2508	.011297[.991]
R-Squared : 0.26002			
R-Bar-Squared : 0.13195			

Table 11.9 Ordinary Least Squares Estimation with "Imfam"

Dependent variable : ROE96

Number of observations : 62

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	-45.2771	30.9636	-1.4623[.150]
IMFAM	.059564	6.9709	.0085447[.993]
FOUNDER	21.1097	7.7017	2.7409[.008]
LNASS	3.6313	2.0631	1.7601[.084]
HISTORY	.042998	.14376	.29909[.766]
PROP	-17.2421	9.7146	-1.7749[.082]
CONG	-5.3324	9.3849	-.56819[.572]
BANK	-5.5217	11.8722	-.46509[.644]
IND	-29.3767	12.8953	-2.2781[.027]
UT	1.6675	17.4619	.095494[.924]

R-Squared	.24353
R-Bar-Squared	.11260

Table 11.10 Ordinary Least Squares Estimation with "Brdshare"

Dependent variable: ROE96

Number of observations : 62

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	-59.5551	30.8135	-1.9328[.059]
BRDSHARE	.21260	.12039	1.7659[.083]
FOUNDER	16.1827	7.9839	2.0269[.048]
HISTORY	.10245	.14361	.71336[.479]
LNASS	3.8337	1.9984	1.9184[.061]
PROP	-14.8546	9.4807	-1.5668[.123]
CONG	-2.3851	9.2546	-.25773[.798]
BANK	-1.5846	11.7348	-.13503[.893]
IND	-23.1133	12.8630	-1.7969[.078]
UT	.57439	16.9001	.033987[.973]

R-Squared : 0.28633

R-Bar-Squared : 0.16281

Table 11.11 Ordinary Least Squares Estimation with "Famrela" and "Brdshare"

Dependent variable : ROE96

Number of observations : 62

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	-58.5459	31.1633	-1.8787[.066]
FAMRELA	2.6689	6.5753	.40589[.687]
BRDSHARE	.19049	.13303	1.4320[.158]
FOUNDER	16.4751	8.0810	2.0387[.047]
HISTORY	.097522	.14529	.67124[.505]
LNASS	3.7654	2.0217	1.8625[.068]
PROP	-15.8933	9.8944	-1.6063[.114]
CONG	-2.3881	9.3298	-.25597[.799]
BANK	-2.1662	11.9166	-.18178[.856]
IND	-23.2248	12.9705	-1.7906[.079]
UT	.089711	17.0793	.0052526[.996]

R-Squared : 0.28862

R-Bar-Squared : 0.14914

Table11.12 Ordinary Least Squares Estimation with "Imfam" and "Brdahsre"

Dependent variable : ROE96			
Number of observations : 62			
Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	-58.5444	31.2394	-1.8741[.067]
IMFAM	-2.2454	6.9516	-.32301[.748]
BRDSHARE	.22003	.12361	1.7801[.081]
FOUNDER	16.0001	8.0734	1.9818[.053]
LNASS	3.7786	2.0231	1.8678[.068]
HISTORY	.10539	.14515	.72604[.471]
PROP	-14.4455	9.6469	-1.4974[.140]
CONG	-2.1252	9.3699	-.22681[.821]
BANK	-1.6132	11.8375	-.13628[.892]
IND	-23.5632	13.0498	-1.8056[.077]
UT	.019899	17.1338	.0011614[1.00]
R-Squared	.28778		
R-Bar-Squared	.14813		

Table 11.13 Ordinary Least Squares Estimation with "Brd0to5", "Brd5to25" and "Brdover25"

Dependent variable : ROE96

Number of observations : 62

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	-60.4653	31.4303	-1.9238[.060]
BRD0TO5	5.4697	3.5467	1.5422[.129]
BRD5TO25	-1.0640	.93039	-1.1436[.258]
BRDOVER25	.26661	.24696	1.0796[.286]
FOUNDER	17.5331	8.0227	2.1855[.034]
HISTORY	.020993	.15516	.13530[.893]
LNASS	3.8299	2.0203	1.8957[.064]
PROP	-15.0026	9.5429	-1.5721[.122]
CONG	-1.0995	9.3854	-.11715[.907]
BANK	-5.4854	11.9910	-.45746[.649]
IND	-28.0185	13.2415	-2.1160[.039]
UT	1.9827	17.1754	.11544[.909]

R-Squared : 0.31713

R-Bar-Squared : 0.16690

Table 11.14 Ordinary Least Squares Estimation with "Brd0to35", "Brd35to50" and "Brdover50"

Dependent variable : ROE96

Number of observations : 62

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	-59.4132	31.7533	-1.8711[.067]
BRD0TO35	.10216	.32623	.31316[.755]
BRD35TO50	.86783	.79618	1.0900[.281]
BRDOVER50	-.19148	.47817	-.40044[.691]
FOUNDER	15.5275	8.1125	1.9140[.061]
HISTORY	.10610	.14683	.72263[.473]
LNASS	3.8628	2.0445	1.8894[.065]
PROP	-15.1182	9.7084	-1.5572[.126]
CONG	-3.4484	9.4968	-.36311[.718]
BANK	-1.9637	11.8693	-.16544[.869]
IND	-25.0341	13.1695	-1.9009[.063]
UT	-.41692	17.3676	-.024006[.981]

R-Squared : 0.29916

R-Bar-Squared : 0.14497

Table 11.15 Ordinary Least Squares Estimation with "Brd0to5", "Brd5to25", "Brdover25" and "Famrela"

Dependent variable : ROE96

Number of observations : 62

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	-59.4380	32.0217	-1.8562[.069]
FAMRELA	1.6271	6.8196	.23859[.812]
BRD0TO5	5.3186	3.6362	1.4627[.150]
BRD5TO25	-1.0739	.94021	-1.1422[.259]
BRDOVER25	.26490	.24943	1.0620[.293]
FOUNDER	17.7058	8.1317	2.1774[.034]
HISTORY	.021088	.15664	.13463[.893]
LNASS	3.7685	2.0558	1.8331[.073]
PROP	-15.5563	9.9097	-1.5698[.123]
CONG	-1.0387	9.4786	-.10959[.913]
BANK	-5.7577	12.1594	-.47352[.638]
IND	-27.9990	13.3684	-2.0944[.041]
UT	1.8492	17.3487	.10659[.916]

R-Squared : 0.31793

R-Bar-Squared : 0.15089

Table 11.16 Ordinary Least Squares Estimation with "Brd0to35", "Brd35to50", "Brdover50" and "Famrela"

Dependent variable : ROE96

Number of observations : 62

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	-58.0013	32.3139	-1.7949[.079]
FAMRELA	2.3128	6.8908	.33564[.739]
BRD0TO35	.061898	.35034	.17668[.860]
BRD35TO50	.86287	.80348	1.0739[.288]
BRDOVER50	-.18211	.48328	-.37683[.708]
FOUNDER	15.8434	8.2394	1.9229[.060]
HISTORY	.10364	.14833	.69870[.488]
LNASS	3.7751	2.0794	1.8155[.076]
PROP	-15.8758	10.0525	-1.5793[.121]
CONG	-3.3129	9.5907	-.34542[.731]
BANK	-2.4817	12.0750	-.20552[.838]
IND	-25.1300	13.2910	-1.8908[.065]
UT	-.54757	17.5281	-.031240[.975]

R-Squared : 0.30076

R-Bar-Squared : 0.12952

Table 11.17 Ordinary Least Squares Estimation with "Fam10" by using 60 observations

Dependent variable : ROE96

Number of observations : 60

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	-50.8576	31.0946	-1.6356[.108]
FAM10	7.3797	6.4308	1.1476[.257]
FOUNDER	20.6760	7.7665	2.6622[.010]
HISTORY	.054673	.14642	.37339[.710]
LNASS	3.7810	2.0880	1.8108[.076]
PROP	-20.8554	10.1804	-2.0486[.046]
CONG	-4.2490	9.4511	-.44958[.655]
BANK	-5.4665	11.9425	-.45774[.649]
IND	-27.7583	12.8217	-2.1649[.035]
UT	-1.2073	17.6110	-.068554[.946]

R-Squared	.26713
R-Bar-Squared	.13521

Table12 Correlation among independent variables

Table 12.1 Correlation among independent variables in regression with "Fam10"

	Fam10	Founder	History	Lnass
Fam10	1	-0.07313	0.106145	-0.00507
Founder	-0.07313	1	0.070661	0.127136
History	0.106145	0.070661	1	-0.0359
Lnass	-0.00507	0.127136	-0.0359	1

Table 12.2 Correlation among independent variables in regression with "Fam20"

	Fam20	Founder	Lnass	History
Fam20	1	-0.10889	-0.00942	0.064806
Founder	-0.10889	1	0.127407	0.071389
Lnass	-0.00942	0.127407	1	-0.03609
History	0.064806	0.071389	-0.03609	1

Table 12.3 Correlation among independent variables in regression with "Fam35"

	Fam35	Founder	Lnass	History
Fam35	1	-0.0481	0.094055	-0.04486
Founder	-0.0481	1	0.121876	0.081068
Lnass	0.094055	0.121876	1	-0.03958
History	-0.04486	0.081068	-0.03958	1

Table 12.4 Correlation among independent variables in regression with "Mandir"

	Mandir	Founder	Lnass	History
Mandir	1	-0.16504	0.012771	-0.0897
Founder	-0.16504	1	0.123247	0.09249
Lnass	0.012771	0.123247	1	-0.03656
History	-0.0897	0.09249	-0.03656	1

Table 12.5 Correlation among independent variables in regression with "Mandir" and "Fam10"

	Fam10	Mandir	Founder	Lnass	History
Fam10	1	-0.69418	0.058591	-0.01936	0.228045
Mandir	-0.69418	1	-0.15927	0.022628	-0.22117
Founder	0.058591	-0.15927	1	0.121876	0.103256
Lnass	-0.01936	0.022628	0.121876	1	-0.04
History	0.228045	-0.22117	0.103256	-0.04	1

Table 12.6 Correlation among independent variables in regression with "Mandir" and "Fam20"

	Fam20	Mandir	Founder	Lnass	History
Fam20	1	-0.74786	0.02318	-0.02856	0.194688
Mandir	-0.74786	1	-0.12687	0.029834	-0.20401
Founder	0.02318	-0.12687	1	0.122497	0.095204
Lnass	-0.02856	0.029834	0.122497	1	-0.0414
History	0.194688	-0.20401	0.095204	-0.0414	1

Table 12.7 Correlation among independent variables in regression with "Mandir" and "Fam35"

	Fam35	Mandir	Founder	Lnass	History
Fam35	1	-0.75011	0.114628	0.127317	0.034098
Mandir	-0.75011	1	-0.19441	-0.08722	-0.08486
Founder	0.114628	-0.19441	1	0.136034	0.095736
Lnass	0.127317	-0.08722	0.136034	1	-0.0319
History	0.034098	-0.08486	0.095736	-0.0319	1

Table 12.8 Correlation among independent variables in regression with "Famrela" and "Brdshare"

	Famrela	Brdshare	Founder	Lnass	History
Famrela	1	-0.40935	0.089126	-0.08323	-0.08352
Brdshare	-0.40935	1	-0.35404	0.086641	0.247241
Founder	0.089126	-0.35404	1	0.090536	-0.01722
Lnass	-0.08323	0.086641	0.090536	1	-0.01386
History	-0.08352	0.247241	-0.01722	-0.01386	1

Table 12.9 Correlation among independent variables in regression with "Imfam" and "Brdshare"

	Imfam	Brdshare	Founder	Lnass	History
Imfam	1	-0.18627	0.070021	0.084269	-0.06266
Brdshare	-0.18627	1	-0.35553	0.040911	0.241447
Founder	0.070021	-0.35553	1	0.103999	-0.0142
Lnass	0.084269	0.040911	0.103999	1	-0.02613
History	-0.06266	0.241447	-0.0142	-0.02613	1

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